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Educational News and Editorial Comment

THE POLICY OF THE NATIONAL EDUCATION ASSOCIATION

The Boston meeting of the National Education Association performed an act of plain justice in elevating William B. Owen to the presidency. He is the author of the present plan of organization. It was his energy and parliamentary ability which put the plan into operation. He has been the chief force at the last two meetings in working out the plan so that it begins to promise better things.

He now enters upon a new and much more arduous task, that of making the Association an agency for the promotion of a truly national program of education. At Salt Lake City, two years ago, and for a long time before, the energy of the Association was absorbed in internal politics of a type unworthy of the profession. There has been no constructive policy guiding the activities of the constituent units of the Association. Centrifugal forces have appeared, separating from the main body those departments which have real problems and are anxious to work on them. First, the Department of Superintendence made it clear that it was not in sympathy with the petty rows of the Association. Following the example of the superintendents, the elementary-school principals are separating themselves from the Association and going about their business. The grade teachers seem to be less certain where they are going, but they are

trying to have a show of their own. To the observer who watches all of this from the point of view of a student of education it seems clear that the symptoms are those of a distracted mind. The Association ought to stop thinking about itself and ought to begin thinking about something really constructive.

Mr. Owen ought to feel that the great body of the Association will support him if he uses the full strength of his office to set the mind of the teaching profession at work on problems of American education. Let us have once more groups of workers who come together to counsel about grade and university organization and about materials of instruction. Let the higher institutions be invited to come back and take a place in the councils of the Association. Let teachers and superintendents learn through mutual help in solving school problems that democracy does not consist in a warfare between officers of school systems. Let the relations of the school to the public be treated by a body of professional thinkers who see clearly that school people can guide public policy only when they are able to formulate wise measures which in a broad-minded way comprehend public interests as well as the interests of the teachers.

In short, the hour has struck, and opportunity stands waiting. We are devoutly grateful in the confident hope that the man is here who is equal to this new and promising occasion.

VOCATIONAL EDUCATION AND GENERAL EDUCATION

One of the most hopeful signs of development within the American school system is the new attitude that is developing with regard to the relation of vocational education to general education. At the time the Smith-Lever and the Smith-Hughes laws were enacted there were strong forces working for the separation of the two types of education. Experience has shown, since those early days, that separation is not in keeping with the spirit of American institutions and not expedient for either type of training.

At the last meeting of the National Society for Vocational Education, resolutions were passed indicating that the members of that society realize that a national system of education must be a unit. At the Boston meeting of the National Education Association the

way was opened for the National Society for Vocational Education to become a department of the more general organization. These significant moves ought to be commended as in the right direction, and every effort ought to be made to close up what once seemed to be a dangerous breach.

FALLACIOUS STATISTICS

One of the national weeklies recently published an editorial which illustrates the difficulty of getting accurate statistics about education before the American public. The editorial is an earnest plea for more education and proceeds as follows to demonstrate the deplorable state of the country.

> We have 603 colleges, universities, and technical schools, the leading 122 of which are endowed for more than half a billion dollars, with another half billion invested in buildings and equipment. And yet, out of our potential college student body of 20,853,516, as represented by the number of children enrolled in our public schools in 1918, there were that year registered in our colleges, universities, and technical schools only 375,359 students.
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> This means that 98 out of every 100 of our grade-school children fail to go on to college. Is it because 98 out of 100 young Americans are not deserving of higher education? We deny it. You must look for the answer elsewhere. Either they fail to go on because they don't think it worth while, or because we are not giving them a fair chance to go on. In either case, Father and Mother, there is a problem and a job for you worth all the energy you have.

The editor who wrote these lines evidently performed a very simple calculation. He used the aggregate number of children who for twelve and more years are passing through the public schools as a base with which to compare the number of students attending college for only four years and came out with 2 per cent as the strictly arithmetical result of his thinking. This editor would hardly venture to make in his office a brief calculation on the retail cost of food supplies and announce a coefficient to the waiting world. He probably does not know that education has its science and its expert figures as well as does the retail market. Is it not time that the teaching profession of the country began to write for the public press the real facts about education?

The fact is that nowhere in the world is higher education so free and so eagerly pursued as in America. Nowhere is there as much

spent on higher education, either in public funds or in private time and energy, as in our country. Nowhere is there so bright an outlook for the increase of expenditures on schools or for the increase of attendance on higher institutions as in the United States.

We agree with our editor that there should be more education and better, but we believe that the way to bring about such highly-to-be-desired results is to get at the facts as they are.

A STUDY OF LARGE AND SMALL CLASSES

It is one of the commonly accepted beliefs of the teaching profession that economy in school expenditures effected through increase in the size of classes is disastrous and indefensible. To be sure, there has been no real evidence on this matter, and ordinary experience has demonstrated beyond any possibility of doubt that a great deal of very successful teaching is done by good teachers in charge of very large classes. We all know, also, that classes may be too small for the cultivation of that social enthusiasm which is essential to success in instruction.

With the economic stress that has of late begun to affect schools and with the realization that increase in the number of pupils in a class is the readiest means of reducing school costs, it is natural that school officers should ask for evidence with regard to the effects of increasing the size of classes. The Bureau of Educational Research of the University of Illinois has rendered a large service in carrying through a careful experimental study on this matter. Certain pairs of large and small high-school classes taught uniformly were measured as to their achievements in various subjects with the result described in the following paragraphs:

> The tables of this chapter show that at the end of the experimental period the achievements of the students in the two types of classes were approximately equal, and there is a slight indication that those taught in small classes were superior. Since the educational investment can be materially decreased by increasing the size of class in the high school, one might infer that the efficiency of the school would be increased by organizing classes enrolling from 35 to 50 students instead of classes enrolling from 20 to 25. In addition to the fact that there are several uncontrolled factors whose influence is unknown, it is necessary to bear in mind the exact conditions of the experiment. Since the same teachers taught both a small class and a large class, there was no difference between the

total amount of work done by the teachers who handled the large classes and the teachers who handled the small classes. In fact, they were the same teachers. Thus, this experiment failed to set up the conditions of large classes as a general plan of organization of a high school. It did, however, realize the conditions which not infrequently exist in the smaller high schools where it is desirable to have a few large classes assigned to teachers who are given compensating small classes or who have the number of classes reduced accordingly. The results of the experiment, therefore, can be applied only to those situations in which the teaching load is kept constant. In such cases the evidence collected indicates that approximately the same average achievement can be expected from the pupils taught in large classes as from those taught in small classes. In other words, the results of this experiment indicate that there is no loss of efficiency caused by organizing a few large classes if the other work assigned to the teacher is such that the teaching load is not increased.

One should recognize that the results of this experiment should not be applied to the question of the size of class where increasing the size of class results in a distinct increase in the teaching load. The instruction which students receive is given partly in the classroom and partly through written work and individual conferences. In such subjects as English composition, algebra, and science requiring laboratory work, it is customary with most teachers to require a large amount of written work. A teacher who gives instruction to five classes of forty students each has a much heavier teaching load than the teacher who instructs five classes of twenty students each, unless he introduces compensating changes in the amount of written work, in the method of handling it, and in the number of individual conferences. In such cases the question of class size is so intimately connected with the method of instruction that we are not justified in drawing any inferences from an investigation in which the method of instruction was assumed to be the same for both types of classes.

INDEPENDENCE OF SCHOOL BOARDS

The ever-recurring problem of the relation of the school board to the other branches of city government came up in Springfield, Massachusetts, in the form of a controversy because the board of education revised the distribution of its funds after the city council had voted a specific budget.

The decision of the Supreme Court of Massachusetts contains a number of paragraphs which are of very general interest. The spirit of the decision is clearly indicated by the following quotation:

The general statutory provisions as to the powers of the school committee, to which reference has been made, have been in substance the same for many

years. They had been interpreted by numerous decisions and had acquired a well-settled meaning long before the enactment of the law providing for a budget. Without reviewing these decisions one by one, it is enough to state summarily their essential conclusions.

The school committee is an independent body, intrusted by law with broad powers, important duties, and large discretion. The obligation to select and contract with teachers implies examination as to their fitness and of necessity carries with it the authority to fix the compensation to be paid. It would be vain to impose upon the school committee responsibility for excellence of the instruction to be afforded to pupils and to deprive them of the power to determine the salaries of teachers. There is much of self-sacrifice and devotion to the common welfare among teachers in the public schools. But, nevertheless, the character of service to be obtained depends to a considerable degree upon the compensation offered. The full and appropriate discharge of their duties by school committees requires ample power to select competent teachers. The legislature, moved by obvious and strong reasons, has vested the school committee with the absolute and unconditional power to agree with teachers upon their salaries to the end that high standards may be secured and maintained in the education of the youth of the commonwealth. In the exercise of their honest judgment on the question of salaries for teachers, the school committee is not restricted to the amounts appropriated. For the time during which schools must be kept by law the municipalities must pay such salaries as may be fixed by the school committee. To take this power from the school committee would break up the long-established system of our law in regard to public schools. The only supervision which the city council or towns can exercise over the school committee is to vote to close the schools after they have been kept the length of time specified by the law. The school committee may make all reasonable rules and regulations for the government, discipline, and management of the schools under their charge. This includes a determination within the bounds set by the statutes of the subjects to be taught and the nature of the schools to be maintained, and the exercise of discrimination, insight, and wisdom in the election of teachers and in the general supervision of the school system, with all the incidental powers essential to the discharge of their main functions.

The statutory provisions under which these decisions were rendered have been substantially the same for a long time. They have been re-enacted without change in the successive revisions of the laws. The interpretation of their terms in the numerous decisions which have been cited may be presumed to have been adopted by the General Court.

This body of statutory and common law regarding the matters of universal interest and profound importance to the public weal was established and widely known before the budget law came into existence. The budget law must be constructed and applied in the light of this history and with reference to this background of school law.

FAILURES IN HIGH SCHOOL

The following article from *School Topics*, of Cleveland, is interesting for the quotation which it contains and also for the facts which it contributes.

Normal percentage of failures in high school should fall between 5 and 12 per cent, it is asserted in a bulletin of the United States Bureau of Education in reporting a survey of the Wilmington, Delaware, schools. Study of failure statistics of various cities, however, would indicate that such percentages are "ideal" rather than "normal," and that Cleveland does not show to disadvantage when its high-school failures are compared with those of other communities.

Figures compiled by the division of reference and research, for the first semester of 1921–22, show that 18.1 per cent of the pupils enrolled in mathematics classes in the ten Cleveland senior high schools failed; and 16.7 per cent of those enrolled in Latin classes failed. In French, 13.9 per cent failed; in science, 12.9 per cent; in Spanish, 11.5 per cent; in English, 10.5 per cent; commercial activities, 8.9 per cent; history, 6.7 per cent; drawing and applied arts, 3.6 per cent; industrial activities, 6.9 per cent. In all cases there were more boys than girls who failed.

The Bulletin prints some figures obtained from other states:

"Of thirty Connecticut high schools studied, algebra failures amounted to 17 per cent of the class enrolment; geometry, 13.7 per cent.

"In New Jersey of fourteen high schools studied, mathematics caused the downfall of 20 per cent, Latin 18 per cent; English, history, and commercial subjects, 11 per cent each.

"Eight New York high schools were studied. In Latin 18 per cent of the class failed, in mathematics 16 per cent, German 13.5 per cent, French 11.6 per cent, history 10.4 per cent, science 9.8 per cent, English 8 per cent, business subjects 8 per cent, Spanish or Greek 41 per cent.

"In St. Paul the mathematics failures were 21.8 per cent of those studying the subject; the next highest was French with 17 per cent failures. Records for 4,120 pupils in Denver show 24 per cent in mathematics and 21 per cent in Latin. Averages for eight surveys, including some of the above, show mathematics, 20 per cent; Latin 19.6 per cent, German 17.2 per cent, English 11.6 per cent, history 10.1 per cent, science 14 per cent, business subjects 9.5 per cent."

It is apparent from the above showing that even the cities which have first call on teaching talent either are not getting good mathematics teachers, or that there are elements intrinsic in the subject itself which cannot be assimilated by some minds.

As a promotion basis the Wilmington surveyors offered the following suggestions:

"The term mark should be based on (a) daily recitations, (b) written tests, at least four a semester, (c) note books, library assignments, project reports.

The final semester mark should be one-third of the sum of the averages or estimates for the three types of work."

The following method of distribution of marks, which approximates the normal curve of distribution, was recommended. Suppose that 100 pupils receive school marks A, B, C, D, E, representing five approximately equal steps from the highest ability to complete failure. The marks should be assigned as follows: A and E each to from three to ten pupils; B and D each to from twenty to twenty-five pupils; C to from forty to fifty pupils.

Teachers should not be required to force this distribution against their judgment, but variations should be fittingly explained, it is recommended.

A HIGH SCHOOL PRINCIPALS' CLUB

The bulletin of the State Department of Education of Connecticut publishes a short article by C. W. Maddocks, one of the state supervising agents, in which an account is given of a club organized by a group of high-school principals who serve a number of the small cities in the southern part of the state. The account suggests a method of cultivating a professional attitude among such a group of school officers and outlines a program of discussion which may serve to stimulate others to form like groups.

The outlines of topics discussed are as follows:

1. How can we effect an increase in the usefulness of the small high school to the community?
   - *a*) Evening or Saturday courses
   - *b*) Courses in citizenship
   - *c*) Short winter courses
   - *d*) Lyceum courses
   - *e*) Public discussions of problems of current interest
2. How can we improve the pupil morale in the high school?
   - *a*) Athletics
   - *b*) Literary and subject clubs
   - *c*) Social activities
   - *d*) Importance of home influence in effecting improved scholarship, discipline, and effort
   - *e*) The school paper
   - *f*) Pupil co-operation and support in the principal's program for school betterment

1. What and when should a high-school principal study?
   - *a*) Benefits
     - (1) Study of books and periodicals
     - (2) Extension courses
     - (3) Summer courses

b) Dangers
  (1) Too much time given to professional study
  (2) Too little time devoted to study and research
c) What books should a high-school principal have in his library?

2. How can a high-school principal encourage teachers to improve professionally?
  a) Worthy professional and reference library in school
  b) Value of principal's guidance and leadership
  c) What minimum, yearly, professional advancement can be expected of each teacher?
3. Report of committee on spring track meet.
4. Report of committee on baseball schedule and regulations.

ON ROMAN HISTORY

Now comes the test prepared by the Advisory Committee of the American Classical League. Its purpose and administration are described as follows:

The purpose of this test is to determine the extent to which the study of Caesar and Cicero increases the pupil's knowledge of the history of the last century of the Roman republic, and to obtain data upon which to base constructive recommendations for improving the teaching of Latin in this respect.

This test may be given any time during the months of May or June, 1922. It is intended to be given to all pupils finishing their third year in high school, whether they have taken Latin or not. It is recommended that the test be given in the third-year English classes or in the home-rooms of third-year pupils. Pupils taking the test will divide naturally into certain groups of which the following four will be most significant for the purposes of this study.

1. Pupils who have studied Latin for two years or three years but who have not studied Roman history.

2. Pupils who have studied Latin for two years or three years and who have also studied Roman history.

3. Pupils who have studied Roman history but who have not studied Latin.

4. Pupils who have studied neither Roman history nor Latin.

Pupils who have taken a course in ancient history in which the history of Rome is included may be regarded as having studied Roman history.

As a basis for estimating the difference in ability possessed by these various groups, teachers will be asked to furnish the final grades of all pupils in elementary algebra.

The test itself includes various statements which are either true or false, such as:

Caesar, on his return from his Gallic campaigns, confiscated the property of his political opponents.

Vercingetorix was the first leader of united Gaul.

Caesar's "Commentaries on the Gallic War" were written for political effect.

The effect of the Roman occupation of Britain was more lasting than it was in Gaul.

The governor of a Roman province served without salary.

The proportion of citizens who voted in Roman elections was about the same as in American elections today.

The total number of questions runs to fifty.

It is to be noted that these questions are framed with a view to "improving the teaching of Latin in this respect." In order to accomplish the end proposed, teachers are asked to put this list of questions, not only before pupils who might by some stretch of imagination be supposed to be informed, but also before those "who have studied neither Roman history nor Latin."

The whole performance in this particular case goes a little beyond the worst that this Latin inquiry has up to this time perpetrated. The external forms of scientific inquiry are being employed with a lack of discrimination which excites both pity and regret. If Latin has reached the stage where this kind of an inquiry will improve it, the proper procedure for the public seems to be clear.

A REPORT ON HISTORY TEXTBOOKS USED IN THE PUBLIC SCHOOLS OF THE CITY OF NEW YORK

In October, 1920, Superintendent Ettinger of the New York City schools addressed a letter to the chairman of the Committee on Studies and Textbooks requesting him to organize a representative committee of principals and teachers to make an investigation of the history textbooks then in use in the city schools. This communication was prompted by a number of complaints received by Superintendent Ettinger to the effect that some of the histories used in the schools contained matter disparaging to the accomplishments of certain noted characters in American history and that some books contained propaganda. Early in October, 1921, the committee was appointed. Its membership consisted of a district superintendent and twenty principals and teachers. Among the things the committee set out to do were: (1) to establish a set of fundamental principles and reasonable standards for the writing of textbooks on

history intended for use in the public schools; (2) to consider in detail the charges made against certain histories and the replies thereto; (2) to invite open public criticism so that the list of histories might be purged of even the slightest taint of impropriety, propaganda, or unpatriotic sentiments.

The report of this committee, a document of 171 pages, has recently appeared. A summary of the findings as amended by the Board of Superintendents is to be found on the last two pages. Chief among these are: (1) No evidence was found to support the charge that certain textbook writers were unpatriotic. (2) The charge that some history texts were written as a result of unwholesome propaganda was not sustained for lack of evidence. (3) Pupils in the public schools should not be taught the personal weaknesses of our national leaders. The findings also contained a statement of what the committee felt were the chief faults of history textbook writers. Some of these faults are the use of offensive illustrations and cartoons, failure to realize that the usefulness of a textbook is determined by the presentation of material that makes for good American citizenship, the discussion of controversial topics, failure to describe adequately and vividly many of the most inspiring events in our history, and the use of the textbook for the promulgation and exploitation of the writer's personal beliefs.

On the whole, the report is very discouraging to one who is not interested in the perpetuation of national myths. The Bancroft type of patriotism that the committee seems to want is, of course, old enough to be respectable, dating back to the days of Polybius. Age, however, is not a sufficient reason for perpetuating the sort of patriotism which permeates Bancroft's volumes. The modern historian does not feel that to be patriotic he must claim perfection for the founders of the government or rather for all of the people who were alive at its foundation. His object is achieved if he succeeds in making them human to the readers of his pages. He does not feel called upon to glorify and deify them as did the Bancroft school of historians.

Besides resenting the type of patriotism which the committee seems to desire, many readers of the report will rebel against the authorities cited to prove that the statements made by certain text-

book writers are either inaccurate, derogative, inadequate, misleading, incomplete, or partisan. When the committee again and again cites Bancroft, Hildreth, Fiske, Lossing, and Harper's *Encyclopedia of United States History* as evidence that McLaughlin and Van Tyne and other textbook writers were all incorrect in certain statements found in their books, there is tacit admission that the committee is not aware of the dawn of a new day in historical writing. An example of what is meant here is the committee's objection to McLaughlin and Van Tyne's statement in describing the Battle of Lexington that Hancock and Adams stole away across the fields. What the committee wants is what Harper's *Encyclopedia of United States History*, Lossing, Bancroft, and Fiske agree in saying, namely, that they were persuaded to retire to a more secure place. This is only one of many similar cases the reader meets in going through the report.

On the whole, the case made against most of the textbooks under fire is weak, because of the authorities cited. The committee seems unaware of the progress that has been made in historical writing during the past generation. We no longer go West in a Conestoga wagon; neither do we cite Bancroft, Lossing, and Fiske to prove that our present-day historians are wrong in their statements and interpretations of the chief facts of our history. While in the minds of the committee history may be a conspiracy against the truth, it is to be hoped that their opinion is the exception rather than the rule. Had the citations in the report been to such recent and noted works as *The American Nation* in 28 volumes, *The Chronicles of American History* in 50 volumes, and the volumes of Channing's *History of the United States* that have already appeared, the findings in many instances would have been different. On reading the report one feels that the committee had in mind a certain kind of history and was continually seeking and selecting authorities to justify its views. Such a procedure is certainly not the one followed by the modern historian.

R. M. T.

EDUCATION FOR VOCATIONAL EFFICIENCY

GEORGE S. COUNTS
Yale University

During the past year there have come from the American press two volumes which should be peculiarly welcome to those interested in the formulation of an adequate policy of training for vocational efficiency, for they are both reports of exhaustive inquiries into the functioning of our economic institutions. Although vocational efficiency is quite generally regarded as one of the more important educational objectives, these reports have received no attention in our professional educational journals. This is the more surprising in view of the greatly increased emphasis given to the attainment of this objective in recent years.

One[1] of these volumes reports the facts, as accurately as they could be ascertained, regarding the amount and distribution of income in the United States from 1909 to 1918 inclusive. This is the first of a series of investigations "into subjects that affect public welfare" to be conducted "under the auspices of the National Bureau of Economic Research, an institution which is composed of nineteen directors who represent a wide variety of economic interests and points of view." The stated object of the investigation was "to learn whether the national income is adequate to provide a decent living for all persons, whether this income is increasing as rapidly as the population, and whether its distribution among individuals is growing more or less unequal."

The second volume[2] contains a report on waste in American industry by a committee of the Federated American Engineering Societies. This committee was appointed in January, 1921, by Herbert Hoover, who at that time was president of the organization.

[1] W. C. Mitchell, F. R. Macaulay, W. I. King, and O. W. Knauth, *The Income in the United States*. New York: Harcourt, Brace & Co., 1921. Pp. xvi+152.

[2] Committee on Elimination of Waste in Industry of the Federated American Engineering Societies, *Waste in Industry*. New York: McGraw-Hill Book Co., 1921. Pp. xii+409.

The investigation was begun almost immediately and by intensive work was carried through to completion within a period of five months. The report covers six industries, namely, the boot and shoe, building, men's ready-made clothing, metal, printing, and textile manufacturing. Four other industries were included in the original plan but for various reasons were dropped from the investigation before completion.

Each of these reports contains much that deserves the thoughtful consideration of educators, for in each is found a partial measure of our vocational efficiency. But what is meant by vocational efficiency? A clear, searching, and comprehensive answer to this question is seldom found in educational discussions. It is too often taken for granted that, if we train carpenters, weavers, compositors, machinists, and engineers in the narrower aspects of their respective callings, we shall become vocationally efficient. It will be well, therefore, first, to arrive at an understanding of what vocational efficiency must involve; then, to examine these reports in the light of this understanding; and, finally, to suggest the bearing of all of this on the formulation of an adequate policy of vocational education.

MEANING OF VOCATIONAL EFFICIENCY

In some quarters vocational efficiency is apparently regarded as something to be described without reference to human values. Its chief attribute is mechanical perfection, the working of part on part without friction or unnecessary dissipation of energy. This is judged an unqualified good, something requiring no external justification. Thus is built up a system of vocational relations, isolated from the rest of life and governed by a scale of values generated by its own activities.

With this conception of vocational efficiency we, of course, cannot agree. And it is perhaps true that it has few conscious supporters anywhere; but the number unconsciously committed to it is legion. This is apparently due to the common failure to make a complete analysis. Certainly, vocational efficiency of this order is not something to be desired for its own sake by the great mass of folk who work in industry, although it is conceivable that to the outsider the whole might present a pleasing picture or afford a spectacle at which to marvel. On the contrary, it is to

be desired only in so far as it contributes to the satisfaction of human needs and the realization of human purposes.

What, then, is the measure of vocational efficiency? To this question there are several answers. Some would say that the aggregate quantity of goods and services produced by a people is an adequate measure of their vocational efficiency. Others would hold that the only satisfactory criterion is to be found in the general material well-being of a people, in the extent of the diffusion of wealth throughout the population. And yet others would maintain that genuine vocational efficiency means the conservation of resources, both human and natural, and the organization of the occupational life so as to make it both interesting and educative as well as remunerative in the narrower sense of the term. Each of these conceptions will be briefly examined.

The first is a very crude and uncritical measure of vocational efficiency, although it is apparently accepted as adequate in many of the programs for vocational education which are finding their way into our schools today. A great aggregate production of wealth by a people is not in itself sufficient cause for genuine satisfaction, since an exceptionally high total production is not incompatible with actual poverty and economic misery among vast elements of the population. Huge bank clearings and numerous trade transactions may denote a degree of economic activity and may serve for advertising purposes; but they may leave the mass of the people in a position of economic insecurity. Such spectacular exhibits are not enough. Of course, in so far as an individual participates intelligently in a great collective enterprise he may derive considerable satisfaction from the activity itself and even from the contemplation of collective achievement, regardless of the nature of the material reward accompanying such participation. A member of a social group naturally takes pride in the successes of that group. He lives and moves in the reflected glory of group accomplishment. We like to hear that five-sixths of the world's corn crop is grown in the United States, even though it does not reduce the price of bread. Likewise, we are thrilled when someone reminds us that the world's financial center has shifted from London to New York City, although it may not lift a mortgage. But it is difficult to stress this type of intangible and immaterial compensa-

tion in an economic system which revolves about competition for pecuniary rewards.

The second criterion of vocational efficiency recognizes the supreme importance of the distribution of wealth and income. According to this conception, the economic system cannot be regarded as efficient unless it raises the great mass of the people well above the level of actual want, unless there is general participation in an abundance of those goods and services which constitute the material basis of civilization. Certainly this is the fundamental purpose of vocation. A decent standard of living for all should be the first charge on human industry. We may say that vocation should also serve other and more idealistic ends, such as those to be mentioned in the succeeding paragraph; but if it does not at least provide the necessities, as well as some of the comforts, of life, vocation should be regarded as failing to perform its most essential function. This is the perfectly obvious and common-sense view. Consequently any scheme of training for vocational efficiency that does not take its departure from this point and does not constantly return to it for a measure of success, is bound to be abortive.

According to the third criterion, a people, in order to lay claim to vocational efficiency, must not only present evidence of a wide diffusion of material prosperity but also show such an organization and functioning of industry as to insure the conservation of both natural and human resources. It must even order its occupational life so as to make vocation itself a great educational enterprise in which the individual worker may find opportunity for self-realization and personal growth. The humanity of this conception makes a fundamental appeal; and its wisdom in guarding the more permanent interests of society is obvious. But the goal is raised so high that it is not easy to imagine the road that leads from our present economic system to it. We shall, therefore, be content here with an examination of our present vocational status from the standpoint of the second and less exacting criterion.

INCOME AND ITS DISTRIBUTION

Assuming, then, that the maintenance of a decent standard of living for the great mass of the people is the first measure of vocational efficiency, it is appropriate now to direct our attention to the

report on income in the United States. Here we find relatively accurate estimates of our aggregate national income and its distribution, as well as comparative data from other countries.

In Table I is given the estimated annual per capita income in

TABLE I*

ESTIMATED PER CAPITA INCOME IN DOLLARS FOR EACH OF TEN COUNTRIES AT THE OUTBREAK OF THE WAR IN 1914

United States	$335
Australia	263
United Kingdom	243
Canada	195
France	185
Germany	146
Italy	112
Austria-Hungary	102
Spain	54
Japan	29

* Adapted from Mitchell, Macaulay, King, and Knauth, *op. cit.*, p. 85.

dollars for each of ten countries at the outbreak of the war in 1914. The United States clearly heads the list. If we were to accept this measure of aggregate income as a satisfactory criterion of vocational efficiency, we would easily be the most efficient people among the great nations of the world. At the time of this estimate our total annual income amounted to approximately $335 for every man, woman, and child in the nation, while the corresponding figure for our nearest competitor, the commonwealth of Australia, was but $263. Some of the differences are probably accounted for by the greater value of the dollar in some of the other countries, but this would not make necessary any important shift in our relative position. It would cut down our lead with respect to certain nations, but nothing more.

Since the study covers a ten-year period, the facts for the different years should be presented. Table II gives the per capita income in the United States in dollars for each year from 1909 to 1918, inclusive. It will be observed that this figure rises from $319 in 1909 to $586 in 1918; but a large part of this apparent increase of income is due to changes in price levels. In order, therefore,

to determine the extent of the advance in real income the estimate for each year is restated in terms of its purchasing power at the price level of 1913. A glance at this column of figures shows that there was comparatively little change in real income during the period. The fact, however, that it did actually increase suggests that the income is more than keeping pace with the growth of population. But it should not be overlooked that the fluctuations from year to year indicate that this increase is probably a function of temporary economic conditions caused by the war rather than a permanent gain due to improved efficiency. Facts for the depression years through which we are now passing would probably show a return to the level of 1909, if not to a lower level.

TABLE II*

ESTIMATED PER CAPITA INCOME IN THE UNITED STATES FROM 1909 TO 1918, INCLUSIVE, AND ITS PURCHASING POWER AT THE PRICE LEVEL OF 1913

Year	Per Capita Income	Purchasing Power at Price Level of 1913
1909	$319	$333
1910	340	349
1911	333	338
1912	346	348
1913	354	354
1914	335	333
1915	358	350
1916	446	400
1917	523	396
1918	586	372

* Adapted from Mitchell, Macaulay, King, and Knauth, *op. cit.*, p. 76.

The foregoing facts, so far as they go, indicate that the American people are vocationally efficient according to the first criterion. The annual per capita income is appreciably greater in the United States than in any other large country; and this amounted to $586 in 1918. Thus, if the national income had been equally distributed, a family of five would have received $2,930, which would undoubtedly have been adequate to maintain a decent standard of living. But income is not equally distributed. Let us, therefore, pass to an examination of the data bearing on this question.

A percentage analysis of the distribution of 37,569,060 incomes in 1918 is presented in Table III. The incomes of approximately 2,500,000 soldiers, sailors, and marines are not included in this analysis, because they are not representative of normal economic conditions and would give an unnatural distribution. In the table is a simple distribution, giving for each income class the percentage of the total number of persons receiving incomes within that particular range and the percentage of the total income which they received. Thus, .5324 per cent actually lost money during this year, having negative incomes amounting to .22 per cent of the total; 4.8645 per cent received incomes ranging from $1 to $500, which equalled 1.18 per cent of the total, and so on. The table also presents a cumulative distribution of the percentage of the total number of persons who received incomes in and under each class of income, as well as corresponding percentages for the total income. Thus, proceeding to the fourth item from the top in this array of figures, we find that 72.0176 per cent of the total number of persons gainfully employed received 44.30 per cent of the total income. The remainder of this section of the table is understood if read in the same way.

Table III shows great inequalities in the distribution of incomes. The range is from actual loss to individual incomes of millions; but the number at either extreme is not large. More significant is the fact that almost 39 per cent of the incomes are under $1,000, and that nearly 86 per cent are under $2,000. Of course, many of the small incomes go to minors and women who, in most cases, are not bearing the heavy burdens of family support, but it is quite impossible to explain all such incomes in this fashion.

An examination of the three more common measures of central tendency is of interest here. The arithmetic average is $1,543; the median, $1,140; and the mode, $957. In a perfectly normal distribution these three measures should be identical. The distribution of income is, therefore, obviously far from the normal. This departure is due to an excessive number of very small incomes and a considerable number of extraordinarily large incomes. The small incomes pull the mode and the median to the lower end of the distribution and the large incomes pull the average to the upper end.

Two other measures should be observed in this connection, namely, the lower and upper quartiles, which give the range of the middle 50 per cent of the distribution. The former is $833, and the latter, $1,574. These two measures mean that one-fourth of the personal incomes in the United States are below $833, and three-fourths are below $1,574. Since the arithmetic average is approximately the same as the upper quartile, it is clear that the most prosperous 25 per cent receive an aggregate income equal to that of the remaining 75 per cent.

TABLE III*

PERCENTAGE ANALYSIS OF THE DISTRIBUTION OF 37,569,060 INCOMES IN 1918†

INCOME CLASS	SIMPLE DISTRIBUTION		CUMULATIVE DISTRIBUTION	
	Persons	Income	Persons	Income
$0 or less	.5324	−.22	.5324	−.22
$1–$500	4.8645	1.18	5.3969	.96
$501–$1,000	33.3537	16.94	38.7506	17.90
$1,001–$1,500	33.2670	26.40	72.0176	44.30
$1,501–$2,000	13.8999	15.39	85.9175	59.69
$2,001–$3,000	8.1584	12.62	94.0759	72.31
$3,001–$5,000	3.6817	8.93	97.7576	81.24
$5,001–$10,000	1.5646	6.79	99.3222	88.03
$10,001–$25,000	.5112	4.85	99.8334	92.88
$25,001–$50,000	.1094	2.41	99.9428	95.29
$50,001–$100,000	.0373	1.64	99.9801	96.93
$100,001–$200,000	.0132	1.16	99.9933	99.09
$200,001–$500,000	.0053	.98	99.9986	99.07
$500,001–$1,000,000	.0010	.38	99.9996	99.45
$1,000,001 and over	.0004	.55	100.0000	100.00
Total	100.0000	100.00	.....	.....

* Adapted from Mitchell, Macaulay, King, and Knauth, *op. cit.*, p. 137.

† Approximately 2,500,000 soldiers, sailors, and marines excluded from the analysis.

The following summary statement from the report merits quotation.

Data regarding the detailed distribution of personal incomes are scanty and difficult to systematize; but the best approximation this bureau has been able to make indicates that in 1918, the most prosperous 1 per cent of the income receivers had nearly 14 per cent of the total income, the most prosperous 5 per cent of the income receivers had nearly 26 per cent of the total, the most prosperous 10 per cent of the income receivers had nearly 35 per cent of the total, and the most prosperous 20 per cent of the income receivers had about 47 per cent of the total income.[1]

[1] Mitchell, Macaulay, King, and Knauth, *op. cit.*, p. 147.

This analysis raises certain doubts concerning our vocational efficiency, as judged by the second criterion. The exceptionally large aggregate income makes a very favorable impression; but the distribution of that income may be cause for serious misgiving. At least, it suggests the unwisdom of adopting an attitude of complacency. In 1918, a year in which the "normal" inequalities were probably somewhat diminished, because of an unusual combination of circumstances, into a consideration of which we cannot go here, over three-fourths of the recipients of incomes received less than $1,600. This brings us to the heart of the matter. Is the income actually received under existing conditions of distribution adequate to maintain a decent standard of living for the great masses of the people? We shall now seek an answer to this question.

INCOME AND AN ADEQUATE STANDARD OF LIVING

In recent years there have been various studies of the standard of living. Some of these have sought to determine the pauper level; others, the minimum of subsistence level; and yet others, the minimum of health and comfort level. It is this third type of estimate in which we are interested here, since no economic system can be thought efficient which does not provide a standard of living at least as high as this. We find such an estimate in a study made by the United States Bureau of Labor Statistics in the city of Washington, D.C., for the month of August, 1919.[1]

The object of this investigation was to determine the "tentative quantity and cost budget necessary to maintain a family of five . . . . at a level of health and decency." In more exact terms, this means a standard of living slightly higher than "that of subsistence, providing not only for the material needs of food, shelter, and body covering, but also for certain comforts, such as clothing sufficient for bodily comfort and to maintain the wearer's instinct of self-respect and decency, some insurance against the more important misfortunes—death, disability, and fire—good education for the children, some amusement, and some expenditures for self-development."[2] This certainly does not suggest extravagant expenditure.

[1] *Tentative Quantity and Cost Budget Necessary to Maintain a Family of Five in Washington, D.C.* Washington, D.C.: Government Printing Office, 1919.

[2] *Ibid.*, p. 5.

The budget finally adopted for the average family of five, consisting of husband, wife, and three children below the age of fourteen years, is as follows:[1]

Food	$ 773.93
Clothing	513.72
Housing, fuel, and light	428.00
Miscellaneous	546.82
Total budget at market prices (August, 1919)	$2,262.47
Possible saving upon market cost by a family of extreme thrift, of high intelligence, great industry in shopping, good fortune in purchasing at lowest prices, and in which the wife is able to do a maximum amount of home work	$ 246.91
Total budget minus economies	$2,015.56

Let us now turn back to an examination of the distribution of income to discover its adequacy to maintain this standard of living. We find that only about 10 per cent of the recipients of income in 1918 would have been able to maintain a family of five on this minimum level of health and decency without resorting to the most extraordinary economies. But let us assume these economies and accept $2,000 as the minimum income for a family of this size. The situation is but little improved. Almost 86 per cent of the incomes fell below this level, while less than five and one-half million persons received incomes of more than $2,000. After making full allowance for higher living costs in Washington than in many other parts of the country, for the large number of income receivers who do not have to support families of five, and for various errors that creep into estimates of this character, it is altogether clear that vast elements in our population are living on a level far below the minimum for health and decency. Not only that, but many are actually living on the pauper and poverty levels. This is the condition that exists in the richest country in the world, a country favored above all others by a bountiful nature, a country that prides itself on its vocational efficiency. It exists in spite of an era of unprecedented mechanical invention, of an almost miraculous mastery of natural forces, of a huge accumulation of capital and the tools of production, and of an enormous increase of wealth. Is this condi-

[1] *Op. cit.*, p. 10.

tion inevitable? Must great masses of people live in continual want in the presence of plenty? Must the poor remain always with us? These are basic questions to be considered in the formulation of any policy of vocational education.

From many quarters has come the suggestion that the only solution is to be found in greater equality in the distribution of income. Let us, therefore, assume for the moment complete equality in this respect. Would this make possible the maintenance of a decent standard of living? As pointed out in an earlier paragraph, under these conditions, a family of five would have received $2,930 in 1918. This would have raised the entire population well above the minimum level for health and decency. That complete equality of income would, for many reasons, be undesirable at any time and under any conditions is possibly true; and that such a program would be an impossible and impractical one for the present is certainly true. Consequently, there is no suggestion here that educators should immediately advocate the complete equalization of income, but it is obvious that a policy of vocational education that interests itself in production alone, giving no attention to the equally important question of distribution, is a one-sided policy. In the writer's opinion, there is little justification, either in ethics or in economics, for the present distribution of income. Greater equality is desirable. It is doubtful, however, if present production, under the condition of complete equality of distribution, can banish poverty and a low standard of living and at the same time provide sufficient savings for the necessary renewal and increase of capital. Production must, therefore, be increased.

WASTE IN INDUSTRY

To what extent can production be increased? How great is the remedial waste in American industry? How is the responsibility for this waste to be apportioned among the various factors that guide industry and influence production? What are the particular causes of this waste? And, finally, is a higher standard of living clearly within the realm of the possible? To each of these questions the committee of the engineering societies has given at least a partial or tentative answer. Let us examine them in turn.

In undertaking the estimation of waste in American industry the committee adopted no criterion of perfection. In their own words,

> No attempt has been made to write an academic definition of waste or to speculate in regard to ultimate savings. For the purpose of this report no attempt has been made to consider all economic wastes. Rather . . . . industrial waste has been thought of as that part of the material, time, and human effort expended in production represented by the difference between the average attainments on the one hand and performance actually attained on the other, as revealed by detailed reports. . . . . Thus it has established no theoretical standard of performance or excellence, but has developed a method of measurement to determine the degree of effective use of those factors within which it was believed waste might be discovered. It has conceived that a given practice is not wasteful until a better has been revealed, and that the value of a newer practice, or the amount by which it is an improvement over an earlier one, can only be determined by units and methods of measurement.[1]

In accordance with this principle, the committee studied and estimated the extent of waste in six industries. Taking 100 points as a theoretical total to represent complete waste, they arrived at the results presented in Table IV. "As no plant is or could be

TABLE IV*

EXTENT OF WASTE IN SIX AMERICAN INDUSTRIES†

Industry	Estimated Waste
Men's clothing	64
Printing	58
Building	53
Textile	49
Boot and shoe	41
Metal	29
Average	50

* Adapted from *Waste in Industry*, p. 9.
† Complete waste, which, of course, is impossible, is represented by 100 points.

entirely wasteful the number of points assigned in any case must be less than 100." An examination of these estimates suggests that the manufacture of men's clothing is the most wasteful of the industries studied. Then follow in order printing, building, textile

[1] *Waste in Industry*, p. 3.

manufacturing, boot and shoe manufacturing, and finally the metal industry. The range of waste is from 29 per cent to 64 per cent. According to the arithmetic mean, American industry as a whole, if these six industries are representative, is but 50 per cent efficient. It seems therefore possible actually to double production.

Who is responsible for this waste? This is a question of prime importance, and a difficult one to answer. But the members of the committee have attempted the apportionment of responsibility among the various factors concerned with production and have arrived at what they regard as a fairly satisfactory result. And "responsibility," as they have used the term, "does not mean moral responsibility as ordinarily understood, but only that responsibility which arises from the undeniable fact that a given cause of waste can be removed only by a particular agency."[1] Taking their estimates thus determined and striking an average for the six industries, we find management responsible for 68 per cent of the waste, labor for 16 per cent, and outside contacts (including the public, trade relationships, and other factors) for 16 per cent.[2] These facts make it clear that vocational efficiency cannot be secured through the application of any narrow conception of vocational education. But let us examine the particular causes of waste before discussing the larger questions of policy.

The complete list of causes is a long one, and there is not space to enumerate them here. We shall be content, therefore, with a brief consideration of seven of the more important and representative ones. They are faulty material control, faulty design control, labor turnover, unemployment, idle plants and equipment, restriction of production, and lost production. A seriatim examination of these seven causes will give us a clearer idea of the character of the problem.

1. Faulty material control may be a serious cause of waste. Thus, in the shoe industry this accounts "for the greatest loss in shoe production, with the possible exception of seasonal demand and production. Firms leave it to the cutters to economize in leather. Where standards are in use, waste frequently occurs through care-

[1] *Ibid.*, p. 8. [2] *Ibid.*, p. 9.

lessness and lack of training of cutters. The loss from idleness in shoemaking occasioned by waiting for work and materials amounts to some 35 per cent of the time."[1]

2. In certain industries faulty control of design greatly increases the cost of the product without enhancing its value. Three illustrations will make the point clear.

> Standardization of the thickness of certain walls might mean a saving of some $600 in the cost of the average house. . . . . There are approximately 6,000 brands of paper, 50 per cent of which are more or less inactive. The duplication of brands serves no useful purpose and ties up money in unnecessary stock. . . . . The standardization of newspaper columns to one size would make possible an annual saving of $3,000,000 to $5,000,000 on composition and plates alone.[2]

3. Labor turnover is a notorious cause of waste in American industry. Its extent is almost beyond credence.

> The average labor turnover for the year 1920 in the metal trades plants covered (wherever record was kept, which was the case in less than half of the plants) was 160 per cent—figured in most cases as the ratio between the number of "separations" and the average number of employees on the payroll. The highest turnover was 366 per cent.[3]

The situation in other industries is similar; and its gravity becomes clear when it is pointed out that "in the shoe industry the cost of training an inexperienced man for cutting upper leather in a well-managed shop is $576; for a semi-experienced man, $450; and to install an experienced man in a different shop costs $50. For the average shop these figures are unquestionably low."[4]

4. Unemployment is unquestionably one of the major causes of waste. And this cause may be broken up into a number of subsidiary causes, since men may be idle for different reasons. There is a minimum unemployment which may be regarded as "normal." The committee found that "in the best years, even the phenomenal years of 1917 and 1918 at the climax of war-time industrial activities, when plants were working to capacity and when unemployment reached its lowest point in twenty years, there was a margin of unemployment amounting to more than a million men. This margin is fairly permanent; seemingly one or more wage earners

[1] *Waste in Industry*, p. 10.
[2] *Ibid.*, p. 11.
[3] *Ibid.*, p. 14.
[4] *Ibid.*, p. 14.

out of every forty are always out of work."[1] This is reminiscent of the following statement found in the report of the Federal Commission on Industrial Relations in 1916:

> A careful analysis of all available statistics shows that in our great basic industries the workers are unemployed for an average of at least one-fifth of the year, and that at all times during any normal year there is an army of men, who can be numbered only by hundreds of thousands, who are unable to find work or who have so far degenerated that they cannot or will not work.[2]

During industrial depressions, such as we are experiencing now, unemployment is greatly increased and reaches its highest point. These "depressions appear more or less regularly at seven- or ten-year periods and each brings its increase in unemployment and wastage of the productive capacity of industry. . . . . In January, 1921, a nation-wide survey of employment made by the United States Employment Service of the Department of Labor showed that there were 6,070,648 workers then employed in industry as compared with 9,402,000 in January, 1920, a decrease of 3,331,352, or approximately 35.5 per cent. This survey covered 35 states and 182 industrial cities and centers and may be considered as fairly reflecting conditions at that time."[3]

There is also intermittent unemployment due to the operation of seasonal influences. Many essential industries show high unemployment regularly at certain times of the year. For example,

> The clothing worker is idle about 31 per cent of the year; the average shoemaker spends only 65 per cent of his time at work; the building trade workman is employed only about 190 days in the year or approximately 63 per cent of the time; the textile industry seemingly has regular intervals of slack time; during the past 30 years bituminous coal miners were idle an average of 93 possible working days per year.[4]

Finally, there is unemployment due to labor disturbances. But, while conflict between management and labor is unquestionably a cause of waste, the loss due to this cause is not as great as popularly supposed. "That these disturbances do produce unemployment is true, but in the industries studied they do not of themselves appear

[1] *Ibid.*, p. 15.

[2] *Final Report of Federal Commission on Industrial Relations*, p. 34. Washington, D.C.: Government Printing Office, 1916.

[3] *Waste in Industry*, pp. 15–16. [4] *Ibid.*, p. 16.

to constitute a major source of reduced production."[1] This is due to the fact that strikes and lockouts usually occur in seasonal employments, and the time thus lost is made up during what is ordinarily the slack season. As a consequence it sometimes happens that there is greater production during a year marked by serious labor disturbances than in some other year peculiarly free from conflict.

5. In many industries there is wasteful overequipment which results in idle capital. Thus,

> Clothing factories are built 45 per cent larger than is necessary; printing establishments are from 50 per cent to 150 per cent overequipped; the shoe industry has a capacity of 1,750,000 pairs of shoes a day and produces little more than half that number; throughout the metal trades, standardization of products would permit of large reductions in plant and equipment.[2]

Likewise, economic depressions, seasonal influences, and industrial conflict result in idle capital as well as idle labor.

6. Production may be restricted by both management and labor. Restriction by the former, while recognized by the committee, is not included in their estimate of waste, because of the impossibility of measuring it with accuracy. That this may cause very serious loss of production has been recognized by many students of economics. Owners naturally consider their interests as paramount and do not hesitate to close factories and shops if by so doing profits may be increased or losses reduced. Although this means idle plants, idle equipment, idle men, and higher prices, it is immediately profitable to those responsible for the management of industry. According to Hamilton,

> So far as the long-run interests of society are in harmony with the immediate pecuniary interests of social groups, they are well looked after. So far as they are contradictory to these immediate values, they are sacrificed. However these future values may be separated into the two divisions, the prevailing industrial order forces us to subordinate a conscious consideration of welfare to a consideration of wealth. It forbids wealth attending upon the behests of welfare.[3]

[1] *Waste in Industry*, p. 16.

[2] *Ibid.*, pp. 17–18.

[3] Walton H. Hamilton, "The Price System and Social Policy," *Journal of Political Economy*, XXVI (January, 1918), 66–67.

Restriction of output by labor has been much more widely advertised, although probably much less important. It is of two kinds.

On the one hand, when workers are scarce the less conscientious workers become independent and slacken speed, whereas when workers are plentiful, they work with greater diligence and care for fear of unemployment. On the other hand, the dread of unemployment is so pronounced that employees engaged in seasonal enterprises frequently restrict production in order to make employment last longer; some workers, moreover, through consideration for their fellow employees limit production to provide work for them, a practice which ultimately results in an economic loss.[1]

7. Much production is lost through ill health, physical disability, and industrial accidents.

The 42,000,000 men and women gainfully employed probably lose on an average more than eight days each annually from illness disabilities, including non-industrial accidents—a total of 350,000,000 days. Of the 500,000 workers who die each year, it is probable that the death of at least one-half is postponable, by proper medical supervision, periodic medical examination, health education, and community hygiene.[2]

On the basis of these figures the economic loss from preventable disease and death among those classed as gainfully employed is estimated at $1,800,000,000.

The loss from industrial accidents is likewise very great.

In 1919 there occurred in industry about 23,000 fatal accidents, about 575,000 non-fatal accidents causing four weeks or more of disability, and 3,000,000 accidents causing at least one day's disability.[3]

The total direct cost, including medical aid and insurance, was not, in the opinion of the committee, less than $1,014,000,000.

We are now in a position to answer the last of the series of questions raised at the beginning of this analysis of the report on waste in industry, namely, Is a higher standard of living clearly within the realm of the possible? Obviously, only an emphatically affirmative answer can be given. And we may say more than that. If we care to organize our economic life efficiently, the entire population can be raised well above the level of economic want and be liberally provided with the comforts and decencies of life. But the realization of this possibility waits upon the formulation of an adequate policy of vocational education. It remains, therefore,

[1] *Waste in Industry*, p. 18. [2] *Ibid.*, p. 21. [3] *Ibid.*, p. 22.

for us to consider certain of the educational implications of the analysis and argument presented in the foregoing paragraphs.

AN ADEQUATE POLICY OF VOCATIONAL EDUCATION

Let us set down in summary the main points made thus far. First, vocational efficiency must be measured in terms of the general diffusion of prosperity and the relative absence of poverty and want among the masses, rather than in terms of mechanical perfection or aggregate production. Second, while the per capita income is higher in the United States than it is in other countries, it is so unevenly distributed as to place a large part of the population on a level of subsistence below the minimum required for health and decency. Third, when judged by a standard that is far from severe, American industry is, from the standpoint of production, but 50 per cent efficient. Fourth, over two-thirds of this waste may be charged against management, while the responsibility for the remainder is borne equally by labor and outside contacts. Fifth, an examination of the particular causes of waste shows clearly that inefficiency is due largely to the fact that every modern industry is a great co-operative enterprise sustaining a host of intimate and interdependent relationships with other industries and with the larger society of which it is a part. Sixth, there is reason for believing that vocational efficiency of a genuinely human order is possible of attainment.

The policy of vocational education which flows from these facts may be stated in seven propositions. The first proposition is that *a relatively perfect system of vocational education, as currently conceived, can hardly be expected to bring about greatly increased production.* There is practically no indication in the report of waste that inadequate training on the part of the rank and file of workers is an important cause of reduced production. In so far as they contribute to inefficiency they do so by a voluntary withholding of labor through either sabotage or strike. Apparently the lack of those narrow skills and knowledges which are stressed in the vocational education of today is not a major cause of waste, for the reason, paradoxical as it may seem, that they constitute the *sine qua non* for industrial participation. Consequently, they will

be acquired in one way or another—on the job, if not through some educational agency. Obviously, increased efficiency is not to be secured by giving major attention to that type of training which is necessary if industry is to run at all, for that is already provided more or less well and will be provided in any event. The great savings and the great gains will come from attending in our public schools to those desiderata that are in danger of being neglected, namely, the less obvious, the less insistent, and the more remote.

This brings us to the second proposition. *Vocational education must recognize that the division of labor within an industry and the dependence of one industry on another for supplies or for markets have made vocational efficiency increasingly dependent on the successful co-operation of individuals and groups.* The most cursory and superficial examination of the causes of waste will establish the truth of this statement. Any policy of vocational education, therefore, that fails to give large attention to ways and means of securing effective co-operation is suffering from a serious case of myopia, if it is not actually seeking to perpetuate a tradition of vocational anarchy the origin of which antedates the rise of modern industrial society. The thing needed today is more attention to the articulation and co-ordination of the parts of our industrial machine rather than to the perfection of the parts themselves in isolation.

The third proposition grows out of the second. *Much greater care should be given to the training of those who are to occupy the managerial and directing positions.* This is obviously the weak point in industry, since the management is responsible for the great part of the waste in production. It is peculiarly the task of the management to secure that co-operation which is necessary for efficiency; so it is here especially that the lesson of co-operation must be taught. Unless the management can keep the industrial machinery running to capacity throughout the year there is little hope for greatly increased productive efficiency, regardless of the effectiveness of the training of those who perform the manual labor and specialized tasks.

The fourth proposition is an expansion of the third. *The rank and file of workers should be given that breadth of view which will*

enable them to see their industry as a whole and the place of that industry in the larger society. This is necessary for several reasons, of which the foremost is the fact that labor participates more or less in the management under almost any condition of industry and will apparently participate in a rapidly increasing measure in the future. Only by a thorough understanding of the industrial order can labor contribute to that type of vocational efficiency which will best serve its own long-run interests and those of society. This type of preparation is likewise justified on the narrower grounds of vocational motivation. We follow a policy of doubtful wisdom, to say the least, when the weekly wage is the only motive that holds the worker to his task. It should be pointed out that among creatures possessed of a modicum of intelligence co-operation is likely to be extended or withheld at the option of the individual and in accordance with what he conceives to be his own best interests. All of this makes especially necessary that wider view of social and industrial relationships on the part of the rank and file.

The fifth proposition is that *an adequate policy of vocational education must recognize the public as an important factor in determining vocational efficiency.* At many points the interests of those engaged in an industry come into conflict with the larger interests of society. On the one hand, we should strive for such an organization of industry as will reduce this area of conflict of interests to the lowest possible minimum; and, on the other, we should endeavor so to inform the public as to enable it to protect itself from the attacks of predatory industrial groups. There are also certain wastes that can be prevented only through the collective action of an enlightened public. Economic crises, for example, cannot be banished by the solitary efforts of isolated individuals or economic groups. Likewise, unemployment in coal mining is likely to continue as long as the public refuses to exercise foresight in the purchase of coal. Public opinion must become informed and articulate in economics as well as in politics. In neither sphere can we place complete trust in either the vested interests or a watchful providence.

The sixth proposition is that *a policy of vocational education, if it is to avoid the charge of being one-sided, must recognize the distribu-*

tion of income as equal in importance to production itself. It is at least conceivable that production might be greatly increased without appreciably improving the lot of the masses. Much more efficient production in American industry is certainly not incompatible with the perpetuation of economic misery. With such a short-sighted scheme of vocational education, not to employ a more damning characterization, the public school should have little to do. Yet it must be admitted that educational authorities have shown no great concern over the relation of vocational training to the distribution of income. They have assumed that, whereas production may be consciously controlled and greatly increased, distribution is a function to be left entirely in the hands of fate or to the mercy of natural laws. This sixth proposition clearly requires a breadth of understanding of economic forces that would be regarded as very impractical by many engaged in vocational education.

The seventh and final proposition may be set down as a conclusion to this whole discussion, namely, *a vocational education that emphasizes solely the narrower skills and knowledges and is separated from a broad humanism can contribute but little to genuine social efficiency.* Vocational training must be constantly examined in its broader aspects; vocational efficiency, which is ordinarily regarded as the end of such training, requires an explicit definition in terms of human welfare. The interests of the great masses of the people must be carefully safeguarded from that narrow type of training that proposes to be practical but which in fact can only promote the interests of a restricted class. The vocational problem must be seen in its relations and as a part of the larger social problem.

STUDENT PUBLICATIONS IN HIGH SCHOOLS

W. C. REAVIS
University High School, University of Chicago

In connection with the reorganization of the curriculum in terms of the demands of the out-of-school life of the pupils, it is significant to note the progress that has been made along the line of vital written work in the high school. This progress does not bear the earmarks of training of the *belles lettres* type so commonly offered in college preparatory courses. It shows rather the direct influences of the enriched materials of the reorganized content courses of the curriculum, the changed spirit of the school, and the results of participation in extra-curricular activities.

Perhaps the most important single factor responsible for this stimulation of written English work is the provision of a ready medium of communication through high-school journalism. Ten or fifteen years ago few school papers were published, except in the larger high schools. Now student publications of some kind or other exist in practically all high schools. These publications differ widely in character. However, we find among them examples of most of the publications of the social and political world, with here and there an outstanding paper.

It is the purpose of this article (1) to discuss briefly the major problems involved in the publication of high-school papers, (2) to evaluate their functions, and (3) to describe the types of publications generally found.

Some people insist that every high school should have a paper. Many principals have acquiesced in this sentiment and have later regretted their action. Whether or not a high school should undertake the publication of a paper is a question of serious concern and one that should not be decided until it has been definitely ascertained that the major problems involved can be satisfactorily met.

In the first place, some adult member of the school, capable and willing to assume the responsiblity of directing the project, must be secured for adviser. The success of the paper depends

upon this individual. If he allows material from the student body to go into print uncensored, the value of the paper to the English work of the school may be entirely lost, and the morale of the school may be seriously impaired. He must direct the efforts of the enthusiastic contributors and hold them responsible for worthy standards of attainment. To maintain high standards of workmanship without suppressing the originality and the spontaneity of the youthful contributors is a task that requires considerable tact and rare skill in constructive criticism.

The adviser cannot take things for granted at any time. He must realize his responsibility to the school and must faithfully discharge it before any publication goes to press. Only in this way can the school be protected against contributions of doubtful or of negative value.

In the second place, competent students must be secured for the positions of responsibility on the staff. Without the co-operation of well-qualified individuals acting as managing editor and business manager, the task of the faculty adviser would be too burdensome. Around these officers may be gathered a number of assistants of less marked ability who are capable of rendering valuable assistance to the leaders. The more responsible positions should never be filled by students who have no other qualification than social popularity or prestige. While this is a valuable asset, it must be supplemented by intelligence, industry, and interest in the phase of work to be undertaken if the success of the publication is to be assured. The compensation will be unusual experience in business management, literary activities, and leadership. It is to be regretted that training of this type is not available for all through the regular curricular activities of the school.

In the third place, the success of the undertaking will depend upon the ability of the student body and the school faculty to maintain the degree of sustained effort required to carry on the project. Momentary enthusiasm will not suffice if the publication is to appear at daily, weekly, or monthly intervals. The student body and the faculty cannot pass to the board of editors and the adviser the responsibility for the work of producing the paper. They must maintain a lively interest in the publication, must be

willing to work for it regularly, and must give united support. Without this the days and nights of the editors and of the adviser will be filled with trouble.

The fourth problem to be settled relates to business management and includes a number of minor problems, none of which are very serious in themselves but which must be considered and properly arranged for before the success of the paper can be assured. A careful budget should be made up and underwritten, the managers selected, and a division of responsibility effected between the literary and managerial staffs. Questions relating to cost, printing, advertising, circulation, mechanical make-up, frequency of publication, quality of paper, style of type, size of page, number of copies per issue, etc., can be left to the business managers and the faculty adviser. However, it is well to allow freedom of expression through the columns of the publication regarding changes that might result in improvement. The management will enjoy greater confidence on the part of the student body if a policy of open-mindedness to suggestions is maintained.

Any publication that serves as a medium of communication for the school community, if prepared by the student body as a real record of interesting school happenings, and if properly edited, should have an important place among the activities of a modern high school. It should stimulate purposeful writing of the sort that has been greatly neglected by English teachers of the culturist type. Such writing should be natural to the majority of students who have ideas to express and the inclination and desire to communicate their ideas to others.

Teachers who are willing to encourage writing of this kind will find the school paper a great incentive to production. It makes available for themes and paragraphs the whole range of interests and activities of school life. The knowledge that approving friends may see and read in print the results of one's efforts encourages greater care in writing and the selection of topics that are of current interest to the school. Class meetings with their appeal to students of particular groups, athletic or other interschool contests with their interest for all, incidents of the classroom, events of the school day, mass meetings, or personal items may furnish material

for narrative or descriptive writing. The editorial column provides a real incentive for writing of another type which may be just as natural and purposeful as that required in news items and stories.

While the stimulus to vital English work may be regarded as the most important result of publication in a modern secondary school, the impetus given to school spirit, pride, and loyalty is a close second. Through the columns of the paper, ideals and sentiments may be developed that will raise the general tone of the school.

Another value of the school paper not to be overlooked is the increase in the efficiency of the school through the opportunity provided for regular communication between faculty, student body, and parents. Important announcements, information regarding school policies, significant changes of any kind, and school or departmental progress can be placed before the school community in such form that proper assimilation of such matters can be made by every person concerned. As a result, school opinion can be more quickly and easily crystallized and school solidarity promoted through the influence of the school press.

Nearly every high school considers it absolutely necessary to publish an "annual," containing the pictures of the Seniors, faculty members, class officers, and the officers of the various school organizations, with accounts of the outstanding activities and events of the school year, including interschool contests and miscellaneous matters of personal interest. The annual publications vary greatly in different schools in make-up, quality, and size. Some constitute a very creditable yearly history of the school; others are a mere cineograph of a few outstanding social events of the school year; some are very elaborate and represent much time, labor, and expense; others are quite modest.

The value of the annual publication has often been questioned on the ground that its influence is restricted and not commensurate with the cost and effort required. Furthermore, it is so largely devoted to upper classmen and to students of social prominence or popularity that it fails to interest the student body in general and as a result exerts no great influence on the school as a whole.

It should be pointed out that these faults are not necessarily inherent and can be corrected. The "annual" can be made to cover a much wider field of school activity without sacrificing the interests of the Senior class for which it is primarily published. It can be made a valuable yearbook of school history that will justify fully the efforts required on the part of the school to produce it and make it a success.

An analysis of the contents of the monthly publications of various high schools reveals a type of publication entirely different from the "annuals" just described. The purpose of the "monthlies" is evidently to encourage contributions of literary value on the part of the students and to furnish representative, current reading material for the school. The contributions consist of stories, plays, descriptions, criticisms, poems, and jokes; and the contributors range from Freshmen to alumni.

It seems that this type of publication has been appropriated by the English teachers as their pet child, and the responsibility for its editing rests with their department. Through this medium the English department has an unusual opportunity to display its choice models and to impress the entire student body with its standards. The fine points of the productions of known "flesh and blood" authors are certain to register with many of the youthful readers where classic models would fail. However, this apparent virtue may become a danger, if the columns of the school publication are uncensored or allowed to be packed with inappropriate filler.

On account of its great influence on the literary efforts of the students, the monthly publication should have a high standard of quality and should be permitted to vary in size according to the amount of available material of approved quality. In reality this publication should belong strictly to the *belles lettres* class and should provide space only for those students endowed with unusual literary talent.

In all middle-sized and large high schools there is need for a medium of communication between school community, student body, faculty, and administrative office. Announcements from the assembly platform cannot cover the scope of information that

should be imparted to the students, and gossip can never take the place of well-written news. There is undoubtedly a place in the modern high school for a small weekly paper devoted exclusively to school news. Such a publication might well be modeled after the very best public newspapers of the day. It should be written by the student body, edited and managed by the students, and censored by a faculty adviser.

The functions of the "weekly" are entirely different from those of the annual and monthly publications. It should give the "news." Unless one has been accustomed to a school newspaper, it may be thought that there is no demand for a publication of this character. This doubt will never be expressed by one who has become accustomed to a school newspaper and has then been deprived of it. It is surprising to see the amount of good wholesome news that can be produced by a school in a week's time. This news may include announcements and statements from the administrative office, the whole round of school happenings, and editorial comment on timely topics of school concern.

The influence of such a publication in a school can hardly be evaluated. In addition to keeping the school community fully informed on all matters of importance within the school, it helps to unify the various activities of the student body, keeps alive the interest of the students in the ideals of the school, and plays an important part in the development of school spirit and opinion.

The weekly newspaper stimulates and encourages contributions of the sort every student is capable of producing by offering a medium of expression and a community of readers to the student who has an important message. This message may come as the result of work in other departments of the school or from the play in the gymnasium or on the athletic field. The fact that it is told by some member of the student group increases the interest of the readers and encourages further effort on the part of the contributor.

If a weekly paper has a distinct place in the high school, then a smaller paper of the same type published daily likewise may have a place. Such a publication would at once supplant the weekly paper, provided the school is large enough to support the

more ambitious project. There is no question regarding the need of a daily newspaper, especially in the large high schools, and there is no doubt about the ability of an energetic and enthusiastic student body under proper direction to produce and support a daily publication. In fact many middle-sized high schools publish daily papers which are a credit to school journalism.

It is unnecessary to repeat the functions of the newspaper in the school. All that was said about the functions of a weekly paper may be reaffirmed with emphasis in support of a "daily." In addition, the "daily" has the advantages of providing more timely news and of supplying a more efficient medium of communication. The "daily" soon becomes an indispensable factor in the life of a school.

The problem to be met in the publication of a daily paper is one of intensive work. It can be easily and readily solved by a proper division of responsibilities and by the co-ordination of effort. The faculty adviser and the editor-in-chief should have a staff for each day of the week, and each staff should be held responsible for the news of the twenty-four-hour period. The business manager must also have more assistants and "speed up" his program of work in order to perform a greater number of managerial duties. With an organization of this type the task is practically the same as in the publication of a "weekly."

What shall the high school undertake in the field of journalism? If successful experience is a reliable guide, the answer is simple. Journalism in the high school is an extra-curricular activity that may be employed to encourage written expression on the part of the entire student body, to develop qualities of leadership, and to contribute to the social organization, welfare, and administration of the school. In the large high schools annual, monthly, and daily publications may be maintained, with the activities of each restricted to the fields described in the foregoing pages. The medium-sized high schools should usually substitute a "weekly" for the "daily," while in most of the smaller schools the newspaper should be omitted and the emphasis placed on the publication of the "annual" or the "monthly."

WHAT NEXT IN SECONDARY EDUCATION?[1]

THOMAS H. BRIGGS
Teachers College, Columbia University

When the new history of education is written there will be no more marvelous chapter than that which records the expansion of secondary education in the United States during the past generation. Although all of us know that the number of high schools has multiplied until every village offers some combination of higher studies and that the time is in sight when all of the children of all of the people will continue beyond the elementary grades, we are too close to the development and too much involved in it for full appreciation. Very properly we have pride in the buildings and equipment that the public has supplied, in the enriched and liberalized courses better adapted to life-needs, in the understanding with higher institutions and the stalwart sense of responsible independence that permit of offerings impossible a decade ago, in the beginnings of scientific study of our problems, in the increased professionalization of our teachers and principals, and in the improved plans of training for better service.

The time has now come for stock-taking, for justification of what we have done, and for the clarification of aims that may insure further wise and economical progress. A desire on the part of parents that their children may have an "opportunity"—however indefinitely that may have been conceived—public pride, and a beautiful even if often blind belief in education have so far furnished support which, in comparison with that given the elementary schools, may be termed liberal; but as mounting costs of other public obligations more vigorously compete with those of education, we may expect, especially from adults who in varying degrees have found disappointment in their own high-school courses, a challenge for us to justify increased or even continued public

[1] A paper presented to the National Association of Secondary School Principals, Chicago, Illinois, February 28, 1922.

support. Many of us have been disturbed during the past few months by varied voices chanting the same song—economy in our schools. But whether coming with hostility from without or with sympathy from within, an inquiry concerning results should be made.

To what extent have we succeeded in achieving the declared aims of our courses?

Before attempting even a partial answer to this question, let us be clear as to why we ask it. In the first place, we seek neither to indict and convict individuals nor to palliate and praise. As leaders in the momentous movement, trained dispassionately to consider all pertinent facts whether favorable or unfavorable, we need and desire to pause now and then for a consideration of accomplishments in order that we may decide wisely as to the continuance or modification of present practices. The answers we find should direct us toward the formulation of new and more assuredly profitable plans.

Without in any way detracting from a justifiable pride in our achievements, let us frankly recognize that by and large we have failed to achieve with anything like a majority of pupils the declared aims of the courses of study. Of those pupils who are permitted or required to take a foreign language, from one-half to three-fourths drop the subject before they have had time enough to secure any appreciable degree of permanent mastery. Although the avowed primary aim of one branch of our English department is to inculcate a love of good literature, the majority even of our graduates apparently prefer the *Saturday Evening Post* to the *Atlantic Monthly*, Robert W. Chambers to John Galsworthy, Berton Bradley to E. A. Robinson, and the "movies" to all else. We have taught history without developing in the majority of pupils the attitude of mind which we were assured would make impassionate and fair-minded students of national and international affairs. We have required at least one year of abstract mathematics without stimulating the majority of pupils to elect advanced courses in the subject where they might find opportunities for applying their acquired knowledge and skill. And so on through the list. For the sake of assured clarity, I emphasize what I have in each of the preceding

sentences stated—that we have failed of our larger purposes, not wholly, but with a *majority* of the pupils whom we have permitted or required to take the subjects of the conventional curricula.

All objective measures confirm this indictment; even more, they strengthen it. Of the pupils who have studied Latin for one and one-half years, only three out of four can give the complete conjugational classification of *est*, and one of three can translate *Hoc facto, pueri discesserunt.* After two years of French fewer than one-half of the pupils can tell the meaning of *J'ai du partir sans vous attendre.* In literature three-tenths of the Seniors prefer a sentimental or unmetrical version to Tennyson's original "Bugle Song." About one pupil of two can define the Monroe Doctrine or tell for what Solon was noted. And fewer than one-half of the pupils who have studied algebra for nine months are able to compute the area of a circle when given the formula $a=\pi r^2$ and told that π equals $3\frac{1}{7}$ and r is 7 feet. These data, taken from reports of standardized tests, concern for the most part concrete factual subject-matter; they do not make it probable that the claims for larger and more abstract values are well founded.

The failure lies primarily not in the knowledge and skill of the teachers, not in the seriousness of their efforts, not in the fidelity of their service. The failure lies rather in the indefiniteness of general purposes of secondary education, in the consequent unbased aims of subject-matter courses, in the lack of adaptation to economic, political, and social changes, especially those in the personnel of the pupil population of the high school, and in the incomplete acceptance in practice of proved educational theory.

The nature of the changes in modern life, indicated in the early pages of *The Cardinal Principles of Secondary Education*,[1] and their implication for the high school cannot at this time be discussed, nor is it necessary to present and support what current theory now holds regarding general transfer, discipline, interest, original nature, and individual differences. The tremendous increase in the enrolment of secondary schools has without question increased the range and lowered the average of academic ability.

[1] *The Cardinal Principles of Secondary Education.* United States Bureau of Education Bulletin No. 35, 1918.

What should be the responsibility of the schools we can ascertain only by reference to general principles—principles soundly based, clearly enunciated, and constantly directed to more effective practice. It is well within the truth to say that a large part of our high-school program is based on compromise rather than on such principles. If disturbed by the perpetuation of traditional practices, even when external changes are recognized, we should be still more disturbed by unguided and irresponsibly proposed new programs.

Having briefly recognized that there are important environmental changes, let us next consider such principles as may guide attempts toward redirection and improvement. The three fundamental questions that will lead to a statement of principles are: (1) What is the justification for free public education? (2) What is the aim of secondary schools? (3) What guides are there for the making of new programs? On everyone who hopes to contribute materially to the improvement of secondary education it is incumbent to have clear answers to these questions.

The only justification for free public education is that thereby the state intends to perpetuate itself and to promote its own interests. Free public education thus conceived is a wise investment, not a generous gratuity. Acceptance of it carries the obligation to devise plans that will contribute to the perpetuation and promotion of society; it also carries the obligation for intelligent and honest agents of the state to refuse to continue any practice, however detailed or venerable, unless it has a reasonable promise of returning profit on the investment. In the past we have often contented ourselves by believing that a proposed objective was in some general way "good"; more and more in the future we shall be compelled, primarily by honesty of stewardship, to show not only that an objective is of immediate or ultimate good for something for the supporting state, but also that it is reasonably attained by the pupils whom we have permitted, advised, or required to seek it.

In an effort to apply this principle there will inevitably arise the question of relative values. The surest guide as to what is of most ultimate worth to the state through growth of the individual is common sense. Of course, in many matters there will be differ-

ences of judgment; but if common sense refers constantly to the proposed guiding principle, it is likely to have little hesitation in deciding between French and the patois of the South Seas, between health habits and the location of the olivary bodies, between the marital adventures of Henry VIII and the Magna Charta, or between *The Idylls of the King* and hendiadys or epizeuxis. These seem to be extreme alternatives, but they are no more so than scores between which we are called on to decide.

It would be sophistry to give verbal acceptance to this principle and then ignore it in practice. This is a time to base action on belief. The principle must be applied both negatively and positively, both for eliminating subject-matter of relative worthlessness and for including new topics that are of obvious value for the pupils preparing for modern life. There is in it no iconoclasm. The substantial values of the oldest program can maintain themselves against trivial aspirants for their place. We propose merely a conscious stimulant to natural evolution that the fittest may be found and that it may survive through the sons and daughters of this generation.

If anyone doubts that this is a cogent criterion, let him spend one hour in seriously applying it to the details of any field of study in his school, whether they be in the traditional course or not. If of the competing details one promises the largest contribution to the state through the growth of the individual, it is justified. If by this criterion it promises little or nothing, how can it be continued at the expense of those who have entered into a contract for the maintenance of their life and the increase of their happiness? Without such approval, there is loss to the state, not only in its investment, but also in the integrity of those chosen as agents of the state to be the leaders of youth.

This basis of free public education being granted, we come to the second major question, What is the aim of the secondary school? The answer proposed is this: To fit each person to contribute better to the state. The term "each person" is wholly inclusive. In our democracy it has generally been accepted in theory that if each individual is developed according to his peculiar aptitudes for good the state will on the whole gain the maximum of advan-

tage; but this sound principle, for reasons that do not here concern us, has never found anything like general adoption in practice. Even as the population of our high schools multiplied and manifested immutable innate differences, we too often persisted in the futile effort to fit all pupils alike for abstract generalized thought and dignified leisure.

Acceptance of the proposed principle means that beyond the minimum of education necessary for all normal citizens in a democracy, a minimum that can easily be provided in the six-year elementary school, each individual should be developed according to his interests, his aptitudes, his capacities, and his abilities, whatever they may be, and to the extent of his power of assimilation. If fully directive, this principle would give us at the end of adolescence citizens all trained for health, home membership, and the wise use of leisure, but each specialized and advanced according to the factors mentioned. Increasing differentiation with retention and successful accomplishment is the ideal response of the high school.

Current liberal practice tends toward this ideal; but in abandoning the older program of one curriculum leading to a single type of objectives, we should beware of the social failure that results when accomplishments are accepted as satisfactory though far below the possibilities of individuals gifted in any of several respects. It must be counted a failure when a boy gifted to be a civil engineer is permitted to remain in contentment with a job at a donkey engine. It is not proposed to lower standards, but rather to adjust them in kind and in degree so that each pupil by his optimum exertion may be most successful for himself and for the state.

It can hardly be questioned that all of the commonly used mental tests measure chiefly the academic and abstract phases of intelligence, largely neglecting other phases which are found highly useful in preserving life and promoting happiness. But even with this limitation, we are told that no pupil with an intelligence quotient of less than .90 when measured by such tests can expect to graduate from a high school of ordinarily good standards. This means that the high school is excluding from its privileges not only practically all of the future workers with simple tools and materials,

three-fourths of the future workers requiring considerable skill (such as carpenters, machinists, and butchers), and one-half of the future workers requiring high-grade skill and knowledge, but also one-fourth of those who in the past have become our workers with symbols and ideas.

Terman[1] has recently presented a report of an unusually extensive survey of the mentality of a young man who after five years in a conventional high school was certified to college though he had a mental age of only 12.5 years. This youth's responses to the test questions fill a reader with surprise, chagrin, pity, amusement, or concern, according to the point of view from which they are considered, and yet he is representative of a considerable fraction of our adult population. In the words of Terman, "his intelligence is probably not equaled or exceeded by more than 70 per cent of our white voters, by more than 50 to 60 per cent of semi-skilled laborers, ... by more than 30 to 40 per cent of our South Italian or 20 to 30 per cent of our Mexican immigrants. Compared to the average American Negro, K is intellectually gifted, being equaled by probably not more than 10 to 15 per cent of that race."

At the other end of the scale are pupils with natural endowments far above those of their less fortunate fellows. Measurements show that they have the ability to become successful in such professions as law, medicine, or engineering, and even to develop into intellectual leaders in such fields as they elect for specialization. They can master more difficult tasks, learn faster, retain longer, and apply theory better than nine-tenths of the pupils with whom they completed the elementary grades.

In a democracy education cannot be refused to those with an intelligence quotient of .90 or less, thousands of whom are each year essaying in high schools tasks which are by no means suited to their capacities or promising of returns on the cost. Neither can abstract and general education be refused to the gifted, or the progress of civilization will be hampered. Where, then, shall we find a solution of the problem of educating heterogeneous adolescents? The answer follows inevitably: in the principles already

[1] L. M. Terman, "Adventures in Stupidity: A Partial Analysis of the Intellectual Inferiority of a College Student," *Scientific Monthly*, XIV (January, 1922), 24–40.

presented. Education, being an investment of the state, must provide a training suitable to the interests, the aptitudes, the capacities, the abilities, and the most probable needs of every normal individual, however low or however high his natural intelligence. Just as truly as a manufacturing plant, it must work up all its raw material so as to make it maximally useful.

The difficulties in the way are by no means few or easily superable. Full acceptance of the principles would inevitably increase the costs of schools, at a time, too, when every community is seeking means of economy. But there is no true economy in continuing a type of education which fails to retain all adolescent youth, to seek with them suitably varied objectives, and to achieve in any satisfactory degree those proposed. Besides the increase in costs it will be objected that, lacking omniscience, we cannot with inevitable justice assign each pupil to work entirely suited to him. True enough. But there is a vast difference between pursuing a policy that is proved ineffective for all but a small minority of even those retained in the schools and wholeheartedly making the attempt to ascertain and provide for varied needs. Intelligence and aptitude tests with the proper kind of junior high school exploratory courses will go far toward making possible proper classifications.

But there is no place in this limited discussion for full consideration or even for a complete enumeration of either the obstacles to be overcome or of the constructive details of procedure. It is possible merely to present principles that seem to be fundamental, to clarify them, and briefly to argue for them, in the hope that the administrative leaders of secondary education, being made more conscious of its fundamental justification, purpose, and obligation, will courageously continue their efforts toward the attainment of the high aim of the American high school.

Perhaps more than any other class, schoolmen are tolerant of criticism, even long-suffering under argument or proof that they have accomplished less than they ought, that they have been uneconomical, or that they have turned out a product for which there is small market. They have a right to demand of their critics support for a new program and guides for its formulation. In an attempt to satisfy the latter part of this reasonable demand, I shall present

three principles, each of which is believed to be sound, easily understood rather than mystifyingly impressive, stimulating without restriction, and above all helpful in answering the questions involved in the reorganization of the secondary school and in the selection of new materials of instruction. It is recognized that no one formula can satisfy all thinkers; but as no one can do independent work without basic guides to which he constantly refers, it is incumbent on each progressive, spirited leader either to accept the principles proposed or to formulate others more satisfactory to him.

The first guiding principle proposed is this: The primary purpose of the school is to teach its pupils to do better the desirable things that they are most likely to do anyway.

This simply stated principle is far-reaching in its effects. The untechnical language must not blind one to the fact that it demands revolutionary changes in even the most progressive schools. Acceptance of it obligates one, first of all, to make an inventory of the desirable activities pursued by the boys and girls in school and by such men and women as they are most likely to develop into. One who seeks a stimulating and profitable problem can do no better than to use this principle in formulating a program of what he should like to do in his school if he had no restrictions of tradition, of extrinsic requirements, or of financial support. Most progress can probably be made at present through the subject departments as organized (English, mathematics, etc.), the items in each being classified under the seven main objectives of fundamental processes, health, home membership, wise use of leisure, civic responsibilities, vocations, and ethical character. It is more wholesome to pursue this line of work positively than negatively. Especially during the past decade secondary-school principals and teachers have been made exceedingly skeptical about the worth of all or nearly all of the subjects normally taught. Observation rather than pessimism regretfully notes that the skepticism has been more readily accepted than the obligation to replace items of small or no worth by others convincingly good.

The tendency of makers of courses of study, including the writers of textbooks, is toward the application of this principle.

An attempt to apply it somewhat exhaustively is exemplified by Bobbitt[1] in his excellent partial analysis of the facts concerning health. The principle is presented here that it may be consciously recognized. Its application can never be complete, but the humblest teacher in the smallest school may go far toward improving his work if at every step he asks, What desirable things in my field are these pupils likely to do whether they are instructed further or not? and How can I help them to do these things better?

However fully this important principle is applied, to insure progress it is necessary to supplement it with another. Consequently this second principle is proposed. Another duty of the school is to reveal higher types of activity and to make these desired and to an extent possible.

The first part of this principle the secondary schools have very generally accepted. Their programs are to a large extent filled with material that attempts to reveal higher types of mathematics, of science, of literature, and of other subjects. Whether these higher types are the most desirable and the most possible it is unnecessary here to discuss. The second part of the principle the schools have neither generally achieved nor generally accepted. If it is wise to lead pupils to see higher types of mental, aesthetic, or manual activity, it is also necessary and economical to train them to desire these activities and to have some degree of the power of attainment. Failure in this respect is evidenced in the frequent dislike that pupils have of what they have studied in the schools and the complacent satisfaction betrayed by the frequently heard remark, "I had that in school, but it's all gone now. I haven't thought of it since." The road is strewn with discarded shells of half-learned foreign languages, mathematical formulas, and isolated facts of history, each tragically suggestive of something not supplied but constantly needed for full and useful living. Any industry not supported by the abundance of the total state would with such a scrap heap have long ago confessed its insolvency, and its stockholders would have sought another means of realizing profit from their major investment. Let us justify the industry over which

[1] Franklin Bobbitt, "The Objectives of Secondary Education," *School Review*, XXVIII (December, 1920), 738–49.

we have charge not only by revealing higher types of activity but also by sending our pupils out with a vision, with some degree of power, and with eagerness for more of the better things of life.

The third and last of these guiding principles is this: So far as possible every subject should be organized so that it is valuable to the extent to which it is pursued.

If the secondary school were assured of its pupils for any definite length of time, there would be some justification for a large amount of deferred values, though in any case we know the stifling effect of meaningless work on the intelligent effort of pupils. But we are not assured of our pupils for a full course, a full year, or even a full term; they leave at a time and at a point in a course which they and their parents elect, and when they leave they abandon useless foundations of structures that never will be erected. For this waste both the individual and the state pay.

Probably the majority of the pupils who drop out could remain longer if they really wished to do so. The secondary school is still a selective institution, as Counts[1] has recently shown, though tremendously expensive for that purpose, but we must not forget O'Brien's[2] proof that most pupils leave representative high schools for reasons other than inability to do the work required. Doubtless, courses of convincing worth may hold them longer, but if the proposed principle were applied in practice, at whatever point pupils dropped out they would be just so much better prepared to live happily and to make their appropriate contribution to society.

One large and highly specialized school that I recently studied had for all its pupils a single curriculum, at least four-fifths of which was relatively valueless if the pupils did not finish the course and, in addition, pursue advanced work of the same kind. Of every hundred entrants twenty-four graduated; only twelve entered colleges, and still fewer advanced to a degree. What should one say of an industry that scrapped at least nine-tenths of the material

[1] George Sylvester Counts, *The Selective Character of American Secondary Education.* Supplementary Educational Monographs, No. 19. Chicago: Department of Education, University of Chicago, 1922. Pp. xviii+156.

[2] Francis P. O'Brien, *The High School Failures.* Teachers College Contributions to Education, No. 102. New York: Teachers College, Columbia University, 1919. Pp. vii+97.

that it accepted for development—all of the material good for something, indeed the best material that the stockholders could provide?

This principle is revolutionary as regards certain subjects now in the curriculum, the subjects, it may be noted, that have been most under the fire of criticism in recent years. But that it is not an impossible ideal has long been shown in certain phases of physical education, literature, composition, music, general science, and civics. We believe that a secondary-school pupil pursuing subjects for one year, one month, one week, or one day, especially in the lower grades, should acquire just so much benefit and the state just so much profit; double the time and there should be double the benefit and double the profit. Any subject that cannot be reorganized so as to be largely of worth to the extent taken should be deferred until the future of pupils electing it is known with a minimum of error.

In retrospect, this paper may be interpreted by some as an argument for the lowering of standards, for adapting the secondary schools to the capacities of the least capable of our youth. Let me assure you that no interpretation could be more erroneous. The public school is a public investment. To insure social economy and the maximum profit it must provide for returning to society all of its youth made better for the richest life possible to each. The adaptation of means to individuals will result in lower standards for some, it is true, but in higher standards for others who, unincumbered with fellows unable and unfit to follow this particular path, can make even faster and more assured progress.

What is next in secondary education will be determined by you men and women and others whom you represent in the high schools in the United States. The effectiveness of your efforts will depend on the clearness with which you see the goal, on the soundness of the guides that you accept, on the consistency and courage with which you use them, and on the independence that you manifest in making progress when you are sure that your road leads to the desired end. When courage, industry, and fidelity are equaled by clear vision, conviction, and guided independence there will be no limit to the contribution that you may make through the secondary schools to the happiness and prosperity of our nation.

THE PROJECT METHOD IN PHYSICS AND CHEMISTRY

ROBERT W. SKINNER
Rapid City High School, Rapid City, South Dakota

The sciences of physics and chemistry, while offering subject-matter most interesting to high-school students, do not seem to enjoy the popularity in high school that should be theirs. This lack of popularity does not perhaps make itself apparent in the enrolment in these two courses. The appeal of the intricate-appearing machinery in the physics laboratory and the lure of the interesting odors evoked by apron-clad classmates in the chemistry room take care of the enrolment. But after the student is enrolled in one of these classes, his interest often declines.

After seven years of experience in class teaching, coupled with considerable observation as a principal, the writer feels that physics and chemistry as commonly taught in the high school do not arouse, as they should, a desire on the part of the student for further study of the sciences. It is expedient, therefore, to inquire in what ways the methods of teaching are at fault. In the first place, in the common method of teaching where all of the students are kept in one group, each day's work, instead of being a quest for information, is simply a task assigned by the teacher, at which the brighter student must soldier in order not to finish too soon and through which his slower classmate must hurry, perhaps only half comprehending, in order to keep up with the middle third for whose speed the assignment is designed. Laboratory work, which should be most interesting and valuable, too often loses its appeal because the time allotment is fixed for the group, and many students are behind or ahead, either performing experiments for which they have not had the proper textbook basis or, even worse, performing experiments the results of which they already know from class discussion.

A plan which the writer has used for three years seems to eliminate at least some of these difficulties. The first year the plan was tried the classes accomplished considerably more than had been accomplished by previous classes, and nearly all of the students who were not then Seniors were interested in taking an advanced course in the subject the following year. The idea is not set forth as something new; it is simply an application of the project method with provision for supervised study. It works best under the common double-period program. The class should have the use of two rooms, one the laboratory and the other a study room. In this study room absolute quiet should prevail. If the students are allowed to talk freely in the laboratory and are asked to go in there if they wish to converse, they soon respect and appreciate the quiet of the study room.

Assignments are made in the form of lesson questions or topics, mimeographed so that each student may have a copy. The questions should be so devised that the answers call for real thinking on the part of the student, which thinking needs real textbook or laboratory work as a basis. Students, in preparing the lessons, work out the questions or topics in the order given, and the teacher has opportunity to have the laboratory experiment which is indicative or illustrative of a certain point performed at a time when it is of the greatest value. Outside reference work should be given as well as field and observation work.

In addition to the questions which all of the students are required to prepare are several which are designated "A" work. This may be extra laboratory work or a side-line investigation which may appeal to the student. Often the students themselves suggest work that they would like to do beyond the regular assignment and ask to be given credit for it. Recognition of this extra work may be given by means of tenths of credits.

After a student feels that he has prepared a lesson, he goes to the teacher for individual recitation. It might seem that this procedure would take a great deal of the teacher's time, but often two or more students may be ready to recite at the same time on the same lesson. In a general class recitation each student is tested on only a small portion of the entire day's work, and in an

individual recitation it need not be more. Of course, the slow student should be given more time. Some abstruse point may need skilful development in the case of a few students. While the explanation is being given, ten or twelve other students who understand it perfectly are not kept listening.

It seems to be conducive to good work to keep the record of the class either on the blackboard or on a chart posted where the individual may watch his progress daily. The writer added a hypothetic member to his class, whom the students named Johnny Average, whose progress was kept at what was considered normal rate.

Of course, if this routine were carried out without break, a great deal of value would be lost. Class discussion, demonstration experiments, lectures by the instructor, the presentation of individual projects to the class, etc., should not be given up. The students may be called into formal class meetings at any time. However, it has been the experience of the writer that formal recitations where the instructor is the central figure tend to become fewer in number. Lectures and methods of development that were considered essential seem to become less indispensable. The students seem relieved when the recitation is over and they are allowed to go back to their individual work. This attitude, while at first a little disconcerting to the instructor, simply indicates that the real aim of the program is being accomplished; that is, the student is realizing the value and interest of individual, independent effort and is confident of his power to accomplish by means of such effort.

USING HOME-MADE TESTS IN HIGH SCHOOLS

LEE BYRNE
University of Iowa
Formerly Supervisor of High-School Instruction, Dallas, Texas

This paper indicates briefly the ways in which some home-made tests have recently been employed in the high schools of Dallas, Texas. These are not published standardized tests but sets of questions prepared by the supervisor in the central office and based directly on the content of the local course of study.

The tests were not directed exclusively toward any one object. Rather it was the intention to secure some representative material from the different classes of the same grade in the various high schools and to examine this material with a view to ascertaining by interpretation whatever lessons it might prove to contain.

The different procedures employed and the kinds of inferences drawn are shown in the following pages. To the outside reader the most fruitful procedure will probably be the analyzing of the subject-matter into its subdivisions and the discrimination between the quality of results attained in the several subdivisions or phases of each subject. In every case it was revealed that notably higher results were attained in some aspects of the work than in others. In one instance it was discovered that an important phase of the subject was practically untaught (graphs in algebra). Such results pointed to the desirability of changes in school practice, some of which have already been carried out to good advantage.

THIRD-SEMESTER ALGEBRA

A general test was given to the twenty-three classes in third-semester algebra when they were about half-way through the term, and toward the end of the term they were given a second test on new topics.

Each paper received a simple mark, and the marks were tabulated. These marks, whose positions were rather accidental, de-

pending on the difficulty of the test and the method of marking, were then translated to a "standardized" or "Dallas scale," based on the probability curve and the assumption of 70 as the mark separating passing from failing, with a range of passing marks from minus $1\frac{1}{2}$ sigma to plus $2\frac{1}{2}$ sigma in the distribution. In other words, the upper four-fifths of the curve was assigned to passing marks and the lower fifth to failing marks. The relative position of each class, teacher, and school, as well as the city average, was indicated on each scale.

The averages in the two tests on a standardized scale were compared item by item with the teachers' marks for the first and second halves of the term and for the whole term. This was done by both tabulation and graphic drawing, leading to the inference that certain individual teachers were marking too high or too low as the case might be.

The Spearman correlation between the first and second tests was .48, between first half-term mark and second half-term mark .62, between term mark and the average of the two half-terms .81, between term mark and the average of the two tests .55, between average of the two half-terms and average of the two tests .51. A fair degree of reliability is thus indicated for all of the marks.

The distribution of correct answers was ascertained for each test, showing the number of pupils securing 8, 7, 6, 5, etc., correct answers. In a six-answer test the median was 5, and in an eight-answer test it was 7.

The percentages of wrong answers by topics in both tests were:

Factoring		13.1
Difference of squares	14.7	
Trinomial square	10.3	
x^2+ax+b	14.3	
Fractions		28.0*
Addition	62.2	
Multiplication	26.6	
Division	29.3	
Linear equations		29.2
Integral	26.4	
Fractional	35.4	
Literal	49.4	
Simultaneous	21.5	

* Computed without the addition question, which was recognized as too difficult.

The addition question was a little too long. Inferences were drawn as to the relative difficulty of the different topics. Regarding factoring and literal equations conclusions were reached in harmony with the recommendations of the National Committee on Mathematical Requirements.[1]

FOURTH-SEMESTER ALGEBRA

A general test was given to the seventeen classes in the last semester of algebra taught. The simple averages for all classes and schools were computed, tabulated, and ranked. The average marks by topics in fourth-semester algebra were as follows:

Solving quadratics	86.3
Simplifying radicals	51.2
Problem involving quadratics:	
Equation correctly formed	15.7
Complete solution	10.3
Drawing graph	15.5
Finding square root	67.2

The test was too long, so that only limited conclusions could be drawn regarding the later questions, but practically all of the pupils had time to finish the questions on quadratics and on radicals.

The average for solving quadratic equations appeared very high and was the result of extensive practice.

The understanding and manipulation of powers and roots represent a rather advanced type of mathematical thinking. As 50 per cent success is not of much value, the results in radicals seemed to indicate the desirability of limiting the amount of ground covered in the field of radicals and exponents and increasing the practice in the more restricted field until greater precision is secured. This is in harmony with the recommendations of the Commission on the Reorganization of Secondary Education[2] and the National Committee on Mathematical Requirements.[3]

[1] *The Reorganization of Mathematics in Secondary Education*, pp. 20 and 23, Bureau of Education Bulletin No. 32, 1921.

[2] *The Problem of Mathematics in Secondary Education*, p. 19. Bureau of Education Bulletin No. 1, 1920.

[3] *The Reorganization of Mathematics in Secondary Education*, p. 20. Bureau of Education Bulletin No. 32, 1921.

The problem involving the use of quadratics was rather difficult; in fact, it is hard to find problems involving quadratics which are not difficult. One might add that real problems are rare. While simple equations are applicable to numerous situations in everyday life, quadratic equations have few practical applications. Only 15 per cent of the pupils had sufficient insight into the problem to form a correct equation, and only 10 per cent reached a final solution. Of course, these percentages would have been somewhat higher if all of the pupils had reached this problem. Nevertheless, the meager results in the *use* of quadratic equations, together with the fact that any real uses of them are hard to find, seemed to throw doubt on the justification of spending such an extensive amount of high-school time on quadratics as at present.

The question on graphs revealed the fact that, though graphs are theoretically a part of our course of study, the teachers are not in general teaching them. The advanced text adopted by the state is out of date, and practice in making graphs enters in only on the initiative of the teacher. The result is that up to this time we have not been doing justice to this very practical and important phase of the subject. Graphic treatment and interpretation should be prominent throughout the algebra course.

Over two-thirds of the pupils produced correct results in extracting square root, which is a good record when we take into account the fact that not all of them had time to reach this question.

The performance on separate topics was also tabulated for the separate schools and the separate classes, showing just which teachers were teaching graphs and the high and low performances of each class and on each topic.

One rough measure of a pupil's ability may be found in the average of the marks which he receives in all of his subjects. These averages were found and brought into comparison with the averages on the test. The ratio of test average to the ability index was computed, and this ratio then formed what McCall would designate as an accomplishment quotient,[1] that is, the amount of accomplishment in proportion to ability. Classes were then ranked both

[1] W. A. McCall, *How to Measure in Education*, pp. 85–87. New York: Macmillan Co., 1922.

ways, by their simple "performances" and by their "accomplishments" in proportion to ability. It was found that eleven classes remained unchanged in rank; four were displaced one rank; two were displaced two ranks, and the average displacement was only one-half of a rank. That is, it made no appreciable difference in appraising these classes whether we used an "accomplishment" ratio or the simple "performance" mark.

The question was asked in another form, whether the ranks the classes attained on the test merely reproduced their ability ranks or whether due to teaching the test ranks proved to be different from the ability ranks. It appeared that the classes by no means arranged themselves in test ranks in the order that would be expected from their ability indexes. Only one class had the same rank in both, the others varying from one to ten places, with an average discrepancy of 4.4 places.

The test results were compared in detail with the teachers' final examination marks and with the term marks. Inferences were drawn as to variations among teachers with regard to the difficulty of their final examinations and the extent to which the teachers were too high or too low in general marking.

LAST SEMESTER OF PLANE GEOMETRY

A test was given to the ten classes completing plane geometry. The usual instruction in geometry and the usual testing consist largely of reproducing demonstrations which are printed in the textbook. In this test all questions were in the nature of "originals" or "applications" of principles learned. For this reason the test was very much harder than an ordinary test; it was given in this form to ascertain the amount of ability being developed to deal with original situations and to make applications of principles learned. The test proved to be too long for the single period in which it was given.

The test proper consisted of three questions. The first required the demonstration or proof of a theorem. The second required a geometrical construction. The third involved the practical application of a known principle. A fourth, a problem in computation, was added for any who might be able to do more in the time allowed than the regular test called for.

The general distribution of marks and the averages for the separate classes and schools were worked out. It was found that the amount of ability being developed by pupils in this subject varied greatly.

Marks on different phases of work were computed for each class and school and for the city. The city averages on the different phases of the work follow. It should be borne in mind that pupils who did not reach a given question were scored as zero.

1. Demonstration of "original" theorem	61.3
2. Problem in construction	35.5
3. Application of principle	38.8
4. Application involving computation	8.0

Only a very few reached the fourth question. The best score was made on the demonstration of a theorem, and this was the type of work on which they had had the most practice. How much higher they would have averaged on the demonstration of a book theorem instead of an original was not determined by this test. There was some ability to proceed independently with theorems similar to those in the book, but this ability was not as highly developed as is desirable.

There was less power to deal with problems of construction than with the demonstration of theorems.

The ability to apply principles already learned was poor. For this the classroom teachers cannot be held wholly responsible, as the number of book theorems now required to be taught is too large. Apparently, the number of book theorems to be learned should be reduced in order to secure more time for practice in applications. This statement is in harmony with the report of the National Committee on Mathematical Requirements.[1]

Test averages and the pupils' ability were compared as in the case of the more advanced algebra test. In this instance for ten classes the test ranks differed from the ability ranks by an average of 2.2 places. The chance difference would be an average of 4.6 places. Consequently we have here indicated clear connection between the two, though by no means complete agreement.

[1] *The Reorganization of Mathematics in Secondary Education*, chap. vi. Bureau of Education Bulletin No. 32, 1921.

The papers of this test were first marked by the several teachers in accordance with general directions; later they were marked by the supervisor in a somewhat simpler manner. The average for the city according to the supervisor's marks was within three-tenths of 1 per cent of the average according to the teachers' marks. With the supervisor's average mark as a uniform standard it was then ascertained how much too high or too low each teacher and school appeared to mark.

FIRST-SEMESTER LATIN

Ten classes in beginning Latin took a test on the forms of the language studied up to that time.

The simple averages and averages on a standardized scale were computed for each class, and the general distribution of the pupils' marks was ascertained.

The percentage of errors was calculated for every separate form given in the test. The percentage of wrong forms in the second declension was 7; in third declension consonant stems, 13; and in third declension *i*-stems, 16, the average being 12.

In the verb forms 26 per cent were wrong in the first conjugation and 31 per cent in the second, or an average of 29 per cent wrong in all of the conjugation work given.

From these figures it was evident that the proportion of error on verb forms is very much higher than on nouns, the amount of error being nearly 30 per cent on verbs and only 12 per cent on nouns. In view of this, and taking into account the fact that there are only fifty or sixty standard noun forms, while the standard verb forms number six or seven hundred, it was inferred that it would be wise to memorize only one-third of the verb forms in the first year, namely, those of the third person; especially as the other persons are not used in the text of Caesar and there is no need of employing them in reading until Cicero is reached in the third year. It seemed that a pupil with thorough mastery of the third person would be able to acquire the first and second persons readily when he came to study Cicero. Since this policy has been adopted the teachers report improved grasp of inflections in the first year.

SIXTH-SEMESTER LATIN

A test was given to the three classes just completing their third year of Latin; this is the point at which they are doing their last high-school reading in Latin prose literature, the next year being devoted to Latin poetry. It was desired to ascertain how much power to read Latin prose literature is being developed in the high-school course.

In the time allowed, most of the pupils were able to answer only the first three questions, of which the first was a passage for translation, the second a series of questions designed to test the extent to which the pupil understood the significance of what he was reading, and the third required an exact statement of the inflectional forms of certain words. The passage for translation was somewhat overdifficult. The questions on the significance of what was read were very searching.

A few pupils had time to write answers to four other questions, one on syntax, one on derivatives, and two dealing with the relation of Latin to English.

The averages made on the separate questions by those pupils who had time to answer them, each average being expressed on a 100-point scale, are shown in Table I.

TABLE I

	Class 1	Class 2	Class 3	All Classes
1. Translation	52.6	34.0	68.3	55.2
2. Understanding and knowledge	48.0	56.7	52.0	52.0
3. Inflections	44.0	26.0	30.0	33.0
4. Syntax	51.0	.....	39.0	43.0
5. Derivatives	76.0	.....	85.0	82.0
6. Relation of Latin to English	90.0	.....	96.0	94.0
7. Relation of Latin to English	.....	.....	44.0	44.0

The test was primarily one in translation. The passage selected for translation had been read in the early part of the term. A more recent selection was not taken because the different schools were not reading exactly the same things at the end of the term, this not being required by the course of study. All had read, though some time previously, the oration from which the selection

was taken. Marking was rigidly mathematical, giving credit for just such fractions of the whole as were right.

It might seem, when a careful marking showed the three schools reaching only 68 per cent, 53 per cent, and 34 per cent correct translation, or an average for the city of 55 per cent, that not much is being accomplished in Latin. But this depends somewhat on the criterion of judgment. We must remember that in mathematics, science, etc., it is theoretically possible to select and adapt the curriculum material to the degree of maturity of the pupils. In Latin, however, we do not bring the pupil in contact with Latin text especially prepared for him and exactly suited to his degree of maturity. Instead, the fundamental theory in Latin requires that we shall use real Latin text, written two thousand years ago for people whose native tongue was Latin. Cicero is used not because the text is easy but primarily because Cicero was the greatest Latin writer.

Even if a similar test should be given in a modern foreign language, which in many ways would be much easier, we should be disappointed if we expected a rigid marking to show any close approach to 100 per cent efficiency and accuracy.

That no such high scores can be expected or attained in Latin classes as ordinarily conducted can be seen by reference to a study[1] by H. A. Brown of the Latin students in fifteen high schools in New Hampshire. Brown made the most extensive study of the results of Latin instruction in high schools which has yet been attempted, though it will be surpassed by the investigations now projected by the Classical League. One of Brown's tests was in the translation of connected Latin. The Brown test differed from the Dallas test in the fact that in the former the passage was sight reading, while in the latter the passage had been read a couple of months previous to the test. On the other hand, the Brown test used a passage from Caesar which was distinctly easier than the Cicero passage. The marking in the two cases was comparable though not exactly the same. In comprehension of meaning, as shown by translation, the third-year pupils of the fifteen high

[1] H. A. Brown, *A Study of Ability in Latin in Secondary Schools*, chap. vi. Oshkosh, Wisconsin: State Normal School, 1919.

schools in New Hampshire with the largest enrolments ranged from 21 per cent to 68 per cent and averaged 45 per cent as compared with a range of from 34 per cent to 68 per cent and an average of 55 per cent for the city of Dallas. So far as we can judge, the results here are substantially similar to those in the larger high schools of New Hampshire.

Other aspects.—The second question was intended, independently of translation, to test the pupil's understanding and knowledge of the situation involved in the passage read. The scores here would have been higher if the class reading had occurred more recently. The marks indicated that the pupils' success in grasping the historical setting and situation was just about the same as their success in translation, though the separate classes varied.

The marks on the "inflections" question seem very low, but this is mainly due to incompleteness rather than error. Errors were not very numerous, but the pupils often failed to make a complete statement of all of the details implied in the form of the question. The answers were marked rigidly on the basis of completeness of statement.

The syntax question was marked with reference to grasp of the essential idea rather than completeness of statement, and the scores were somewhat higher than for inflections.

The questions on English derivatives and on the relation of Latin to English were easy and the scores relatively high. There was no indication that the relation of Latin to English was being neglected, the lowest scores being in those questions dealing essentially with the Latin itself.

One of the problems to be considered by the Classical League in its investigation is whether the traditional objective of power to translate classical Latin shall remain the central objective or whether it shall be abandoned in favor of some objective which takes more account of the degree of maturity of the pupils and the probable brevity of their Latin course. Results such as those from this test have bearing on the question.

Comparisons were also made of the test marks with the teachers' final examination and term marks and with ability indexes formed by computing each pupil's average in all subjects. The class

making the lowest score on the test was also lowest in ability. The ranking in test performance was the same as the ranking in "accomplishment" in terms of ability (that is, the ratio of test performance to ability index).

SECOND-SEMESTER HISTORY

A test was given to twenty second-semester classes studying medieval history. Simple averages and averages on a standardized scale were worked out and compared with the teachers' marks.

The test consisted of information questions of fact or identification.

The percentages of wrong answers for the various types of information questions were:

Fact of social custom	8.0
Fact of event	26.8
Identification of person	30.4
Non-personal identification	28.8
Identification of place	27.6

Educational Writings

REVIEWS AND BOOK NOTES

School administration in Canada.—A report of the administrative practices in the cities of Canada has been prepared by Professor W. L. Richardson.[1] This is the most valuable treatise on current practice in the administration of the city schools of Canada that it has been the privilege of the writer to read. It contains a splendidly digested mass of facts covering practically every phase of city school administration. A survey is made of approximately sixty Canadian school systems, but the facts are put together in such a way as to give, not a picture of a single city, but a cross-section view of the situation in all of the cities of Canada. Frequent comparison is made between the practices in Canadian cities and cities of the United States of the same size.

The strongest chapters, in the judgment of the writer, have to do with the school board, the chief activities of the school board, the teaching corps, and the departments of school attendance and medical inspection. All of the other chapters are strong, with the possible exception of the chapter dealing with finance. Probably the financial problems of Canadian cities are too complex to be dealt with in a brief digest of forty pages.

The final chapter gives a summary and contains the recommendations of the surveyor. The recommendations are somewhat general and are not based entirely upon the facts. They represent, rather, the generalized experience of the author and his views of what ought to prevail in the ideal city school system. This is perhaps the most hopeful aspect of the book, for, after all, current practices do not always furnish the best standards. An expert's generalizations should go beyond current practice and should include recommendations based upon comparative education.

A striking fact, shown on every page of the book, is the great similarity between Canadian school systems and school systems of equal size in the United States. An analysis of the policies and practices of an equal number of American cities would reveal practically the same results. It is gratifying to observe that the cities of the United States compare as favorably as they do with the cities of Canada. Sometimes Americans have felt that Canadian schools are

[1] WILLIAM LEEDS RICHARDSON, *The Administration of Schools in the Cities of the Dominion of Canada.* Toronto, Ontario, Canada: J. M. Dent & Sons, Ltd., 1922. Pp. xviii+315.

superior to theirs. Nothing in this report would seem to show any particular superiority of the city schools of one country over the other. A superintendent of schools, in reading the study, gets the impression that school boards and officers in Canada are dealing in the same way with the same que tions as are school boards and officers in the United States.

A surprising fact is brought out on page 7 to the effect that in Canada there is no outstanding school for the training of school administrative officers. The author's suggestion that Canada create some general educational clearing house is a decidedly worthy one. As poorly equipped as we are in the United States with our present Bureau of Education and our present state departments of public instruction, American city school administrators may at least congratulate themselves upon a favorable showing when compared with Canada.

The study is a valuable addition to the literature of comparative education and ought to stimulate Canadian educators to a more careful systematization of their practices and the creation of a more adequate means of exchange of methods and ideas between administrators.

E. E. LEWIS

ROCKFORD, ILLINOIS

New monograph on secondary education.—There appears to be a common belief that the American public high school is a people's college and that the various occupational, social, and racial groups are represented in the high school in fairly equal proportions. Dr. Counts has undertaken to determine the amount of truth contained in this belief and has reported his findings in a recent monograph.[1] His data do not give much support to the idea that the public high school in the larger cities is no longer selective in the sense that this term was used in describing the high school of twenty years ago. The data used as a basis for the investigation were taken from the high schools in four cities, namely, Seattle, Washington; St. Louis, Missouri; Bridgeport, Connecticut; and Mount Vernon, New York. The data were secured through questionnaires returned by high-school pupils, giving information showing the various groups represented in the high schools. Information was also secured concerning the present and contemplated persistency of pupils in school together with information relating to the psychological selection of the student body.

Dr. Counts finds that the high-school population in the four cities studied is recruited very largely from the homes of the professional and business groups and that the children of the laboring groups enter the high school in relatively small numbers. He finds that children coming into the high schools from the different occupational groups exhibit different tendencies in their selection of

[1] GEORGE SYLVESTER COUNTS, *The Selective Character of American Secondary Education*. Supplementary Educational Monographs, No. 19. Chicago: Department of Education, University of Chicago, 1922. Pp. xviii+156. $1.50.

curricula, with the children from the relatively lower grades of occupations selecting the practical courses which point outward toward wage earning rather than upward toward higher education. He further discovers that the children whose fathers are engaged in professional occupations indicate a greater determination to complete their high-school course than the children of common laborers. Also, an analysis of the results of psychological tests given to the selected groups shows that many of the pupils withdrawing before graduation possess marked talent and ability. It is suggested in the monograph that it is most unfortunate that these children are not in some way caused to continue their education to the same point attained by children of less ability but of better economic and social standing.

One of Dr. Counts' conclusions reads as follows:

> While the establishment of the free public high school marked an extraordinary educational advance it did not by any means equalize educational opportunity. . . . . Education means leisure and leisure is an expensive luxury. In most cases this leisure must be guaranteed the individual by the family. Thus secondary education remains largely a matter for the family initiative and concern and reflects the inequalities of family means and ambition [p. 148].

This may be the practical situation which confronts secondary-school leaders, but our theory of secondary education outlines a contrary state of affairs. It would be interesting to discover whether such practical situations as revealed by this monograph can be changed to satisfy our present theory of free high-school education for all. It may be that we are attempting an impossible task. All of the evidence presented in the monograph indicates that the public high school is serving the occupational groups representative of the upper social strata of the four cities rather than all of the occupational groups. This fact is one of much significance, especially in view of the present questionings as to the aims, purposes, and needed extensions of the facilities for secondary education. The monograph tends to disprove the contention that the public high school of the city is reaching all classes and that the selective principle is no longer operative. It would be very instructive to have a similar study made of a typical group of the smaller towns and cities, with the end in view of discovering whether the public high school is as narrowly selective in such centers as in the four cities reported in this monograph.

The selection and organization of the material presented, the problems raised, and the careful scientific workmanship illustrated make the monograph valuable for courses in secondary education as well as informing and suggestive for administrators and others in the field of secondary education.

J. B. EDMONSON

UNIVERSITY OF MICHIGAN

Reconstructing the curriculum.—There have been a number of books written which outline the curriculum, which state in general its objectives, and which explain its contents in both the grades and high school. But we have not

been told in any of these publications specifically how a curriculum should be made. Moreover, the demand for such a publication has been felt keenly for a number of years. When the reconstruction of the curriculum in St. Louis was undertaken in 1912 the situation was faced of having to build from the ground up without any comprehensive or adequate guide, except such as could be constructed within the limited time and with the meager means at the disposal of this school system.

It was to meet the need first and primarily of Los Angeles in the building of a course of study and, second, to provide a basis for curricular reconstruction in any other city where the educational leaders possess the foresight and courage to undertake such a task that Professor Bobbitt has prepared a monograph[1] which marks a distinct era in educational reconstruction.

The point of view of the monograph is stated in one of the introductory paragraphs as follows:

> The work which is now going on in Los Angeles in the re-examination of the course of study in junior and senior high schools presents a method of procedure. It is one which takes full account of the practical situation as it is. It attempts only to find the next possible and desirable steps of progress; to take those and to go no farther until conditions are ripe for going farther. Yet at the same time, the method looks to the fundamentals of the curriculum. It plows as deeply in preparation for the work as if it intended a rather complete reformulation of the curriculum without regard to the present situation. The major problem was thus how to provide for only the immediate "next steps of progress," and yet do it all on the basis of fundamentals. Experience with the method has proceeded far enough to demonstrate its value [p. 1].

The author strikes at the fundamental basis of education when he outlines the educational objectives under the following heads:

I. Social Intercommunication, mainly language
II. The Development and Maintenance of One's Physical Powers
III. Unspecialized Practical Labors
IV. The Labors of One's Calling
V. The Activities of the Efficient Citizen
VI. Activities Involved in One's General Social Relationships and Behavior
VII. Leisure Occupations, Recreations, Amusements
VIII. Development and Maintenance of One's Mental Efficiency
IX. Religious Activities
X. Parental Activities, the Upbringing of Children, the Maintenance of the Home Life [p. 7].

Moreover, he does not end with giving these main objectives of the curriculum, but does what no one hitherto has dared to attempt—and herein, to my way of thinking, lies his greatest contribution—presents a complete list

[1] FRANKLIN BOBBITT, *Curriculum-making in Los Angeles*. Supplementary Educational Monographs, No. 20. Chicago: Department of Education, University of Chicago, 1922. Pp. v+106. $1.00.

of the specific objectives of education. Then he proceeds to interpret the subject-matter, method of procedure, and the activities of the school in terms of his outlined objectives. The definiteness and concreteness of this presentation do not permit those who accept them to include conventional subject-matter in the course of study unless it serves the purposes set forth, and no one can mistake the purposes.

The author has set a new standard in the reconstruction of educational procedure. No school system can justify itself in perpetuating its conventional junior and senior high school curricula or make a perfunctory revision of them and still maintain its educational standing with an example of such definite and effective procedure of curriculum-making available.

E. GEORGE PAYNE

HARRIS TEACHERS COLLEGE, ST. LOUIS, MISSOURI

High-school teaching.—Up to the present time the available literature dealing with problems of teaching in secondary schools has been limited to three or four outstanding volumes. To this body of material there has recently been added a new book[1] by Mr. Nutt, in which the selection and organization of subject-matter show some interesting variations from the other texts in this field.

The author defines his task broadly but explicitly. He maintains that the teaching situation involves a number of fundamental problems which, if confusion in thinking is to be avoided, must be specifically differentiated in their treatment. Consequently, he adopts the title "Principles of Teaching" in order to include as principles "the chief or leading things" which the teacher must keep in mind. Under this broad title there appear such specific subdivisions as method, devices, technique, motivation, etc. The author further defines his problem by emphasizing the fact that the high-school instructor should be primarily concerned with teaching *pupils* rather than *subject-matter* and that the various school subjects are simply the means by which the pupils are to be taught. In keeping with this position that the pupils are to receive the central emphasis, he accepts the logical conclusion that the fundamental basis of all principles of teaching must be the psychology of the pupils' responses. This view, which is really basic to the author's entire treatment, is clarified in the following quotation:

> The emphasis in all teaching should be upon the learning process and not upon the subject. It is the function of the teacher to stimulate the mind of the learner to react effectively to subject-matter. When the learner fails in his efforts to master the subject-matter or fails to form the habits desired, it is the business of the teacher to determine the exact point or points at which the mental processes of the learner were in error, and to bring about correct mental procedure. In other words, then, it is

[1] HUBERT WILBUR NUTT, *Principles of Teaching High School Pupils.* New York: Century Co., 1922. Pp. xiv+359.

what goes on in the mind of the pupil that educates him. Therefore, when we talk about educating the pupil by means of the subject, we are talking about what goes on in the mind of the learner and how it goes on as a result of dealing with the subject-matter. . . . . In fine, then, the mental procedure of the learner may be called the core of the teaching situation, and all other principles or considerations must be organized around this core or center [pp. 10–11].

After an initial chapter devoted primarily to the meaning of adolescence and to the functions of a modern secondary school and its various subjects, there appears a discussion of the psychological processes and the corresponding methods involved in learning. Other outstanding chapters deal with the motivation of pupil responses, the organization and presentation of subject-matter in relation to the particular characteristics of high-school pupils, the classification and criticism of devices of teaching, and various forms of technique. The text also includes an excellent discussion of study habits and a treatment of individual differences and measurements.

The book is well adapted to the maturity of the college student, although the general terminology would seem to make an introductory course in psychology a desirable prerequisite. The clearness with which the author has defined his terms and the concrete character of the treatment deserve particular mention. The book is an excellent piece of work and is a valuable addition to the literature of its class.

G. T. BUSWELL

Higher mathematics in high school.—Within the last thirty years there have been advocated in Europe and in America movements which have exerted considerable influence in the organization of the mathematical curriculum of today. One of the most important of these is the demand for a close correlation of the mathematical subjects. Accordingly, some of the work usually taught in courses in analytic geometry, trigonometry, and calculus is to be brought down into secondary-school mathematics. Thus, the French mathematician, Tannery, advocates the teaching of some integral calculus before the study of measurements of the solids as taught in courses in solid geometry. He points out that this would be a saving of effort and that it would result in clear understanding. Some of the French textbooks conform to these ideas.

Today, in a number of European countries, the elements of calculus are taught in the twelfth school year, but in the United States this innovation is yet to be made. Those who are interested in the development of the mathematical curriculum will welcome a recent contribution[1] on this subject. In the first half of this book the author discusses the following topics: "A Study of the Status of Mathematics in the Schools Abroad that Correspond to our High

[1] NOAH BRYAN ROSENBERGER, *The Place of the Elementary Calculus in the Senior High School Mathematics*. Teachers College Contributions to Education, No. 117. New York: Teachers College, Columbia University, 1921. Pp. vii+81.

Schools," "The Trend of Mathematics in our Public School System," "The Important Position Occupied by the Calculus in the Mathematics Structure," "A Historical Survey of the Natural Growth of the Calculus in the Development of Mathematics," "Comparison of Textbooks on the Elementary Calculus for Beginners and for Self-instruction," and "The Trend of American Education in General." The second half of the book contains detailed suggestions for a modern presentation of the elementary calculus.

The author has aimed to show why pupils should have the opportunity to study calculus in the secondary-school course and to point out that an elementary course can be formed which is well adapted to the mental ability of senior high school pupils. The historical survey of the growth of calculus is a clear and simple presentation which will be of interest not only to teachers but also to senior high school pupils.

E. R. BRESLICH

Measurements in a public school system.—One of the first essentials to the proper organization of instruction is a careful analysis of the capacities and needs of the individual pupils within a school system. With this in mind, a study has been made of the situation in the public schools of Winchester, Virginia.[1] The investigation, planned by Dr. Dearborn and Dr. Inglis, was carried on with the co-operation of the University of Virginia, the Virginia State Department of Education, and the officers and staff of the school system of Winchester.

The method of procedure is outlined in chapter ii. First, every pupil was given three or more group intelligence tests. In the cases of those whose scores appeared to be of doubtful validity individual tests were administered. In order to measure the achievement of the pupils in the various school subjects, tests were given in arithmetic, reading, spelling, and handwriting. The teachers in the schools were then asked to estimate the pupils' intelligence, scholarship, and industry.

The following paragraphs are illustrative of the conditions disclosed by the tests:

> In almost every grade, probably in every grade, pupils whose mental tests show an intelligence bordering on, if not actually of, feeble-mindedness, pupils of normal intelligence, and pupils of superior intelligence are being educated, or rather the attempt is being made to educate them, in the same classes [p. 20].
>
> The attempt is being made to teach in the same classes advanced forms of reading to pupils whose present reading abilities range all the way from near-illiteracy to the reading abilities of the average high-school Senior. It cannot be done. Likewise the attempt is being made to teach in the same classes the more complex forms of arithmetic

[1] *Psychological and Educational Tests in the Public Schools of Winchester, Virginia.* University of Virginia Record, Vol. VI, No. 6. Charlottesville, Virginia: University of Virginia, 1922. Pp. 54.

to pupils in the upper grades whose abilities in the fundamental operations vary all the way from nearly zero to the abilities of the skilled accountant or bookkeeper. Again it cannot be done [p. 24].

The recommendations presented in chapter iv constitute an important phase of the report. Among other things it is urged that the pupils be grouped according to brightness, that instruction be adjusted to meet the needs of the classes so organized, and that psychological and educational testing be given a permanent place in the organization of the school system. While in some respects the organization of the report might be improved, the presentation of the data is clear and effective. The study is an interesting contribution to the testing movement.

FLOYD W. REEVES

A general course in social science.—General courses, each offering a survey of some relatively comprehensive field, are coming into favor. Organized on this principle are reconstructed mathematics, general science, many two-year foreign language courses, and, once more, general history. If history, with its relatively firm footing in the high-school curriculum, has found it desirable to don this once discarded dress, it is not surprising that the remaining social sciences which have been struggling to obtain a foothold in the high school should unite into one general course and thus press their claims for recognition. Economics, sociology, and the long established but much remodeled course in civics make common cause in the third volume of the American Social Science Series[1] and seek in this combined form "to meet the needs of those institutions in which opportunity is lacking for a detailed treatment of the social sciences individually" (p. vii).

The authors are no doubt fully justified in their claims for this volume, that "it marks, moreover, the advent of a new movement in secondary education," as well as in their hope that "it makes a definite contribution" to this movement. "The aim," says the preface, "has been to provide the student with typical material for a general introductory course in problems of democracy, which not only stress certain fundamental characteristics of our own civilization, but preserve at the same time a proper balance between the political, the economic, and the social factors in American life." The topics have been treated as unified problems, each from the standpoint of general social development, not subdivided into "separate air-tight compartments labeled political, economic, and social."

The problem of selecting materials from an abundant field has been excellently solved as regards topics chosen; and the treatment of these topics is well-balanced, concrete, and sure to awaken interest. The language is brisk and clear; sentences short and to the point. The illustrations are unusually

[1] HENRY REED BURCH and S. HOWARD PATTERSON, *Problems of American Democracy*. New York: Macmillan Co., 1922. Pp. x+601.

apt and interest-compelling, for example, the one entitled "Women of New York protesting against high prices" (p. 435).

The point of view of the authors is not only evolutionary, but almost painfully Darwinian. Natural selection is repeatedly invoked to explain social origins, and there is frequent failure to distinguish sharply between theory and fact. It is asserted as a fact, for instance, that "the Scandinavian immigrant, unaccustomed to the moderate climate found along the eastern coast of the United States, prefers the cooler Northwest to which he can adapt himself" (p. 14). Chapters i to iv and, in a lesser measure, chapter xl can stand considerable revision from this point of view.

A good course in general history is a desirable prerequisite for the study of this book; a course in United States history would profitably parallel it or immediately precede it. The volume will be especially serviceable in those states which have recently made the study of citizenship and social problems compulsory, for example, Iowa and North Dakota.

O. A. TINGELSTAD

LUTHER COLLEGE

Problems of juvenile delinquency.—Educational progress, which is brought about by a complex of social forces, cannot be separated from other types of social progress. The ever-changing social structure requires constant modification in the schools. Many cities are finding their educational problem complicated by the rapid influx of foreign-born or colored population. An investigation[1] has been made of one phase of this problem as it relates to delinquency and crime in an industrial center containing a mixed population.

The monograph opens with a brief description of the situation in Gary, Indiana, where the data were secured. Because of the limited number of cases the study has been made intensive rather than extensive. Juvenile delinquency and adult crime are treated separately in the discussion. The author has included a number of excellent tables and an extensive bibliography in the appendix.

In a general way the results obtained in this study agree with those found in the Special Report of the United States Census on Prisoners and Juvenile Delinquents in 1904 for the United States as a whole. In both cases the new immigration (since 1882) and the colored population bear more than their share of juvenile delinquency and petty adult crime. The author interprets these facts in the following manner:

> It is unfair then in juvenile delinquency and adult crime in Gary to compare the New Immigration and the Colored, consisting chiefly of the lower economic and social classes, with the Americans and the Old Immigration including *all* social and economic

[1] EDNA HATFIELD EDMONDSON, *Juvenile Delinquency and Adult Crime.* Indiana University Studies, No. 49. Bloomington, Indiana: Indiana University, 1921. Pp. 114. $1.00.

classes because the unfavorable relation of the races or nationalities of the New Immigration, and to a certain extent that of the colored race, to juvenile delinquency and petty adult crime is determined not by the race or nationality group, but by the social and economic class to which these races or nationalities belong [p. 99].

The data presented show that a relationship exists between juvenile delinquency and adult crime on the one hand, and social and economic class on the other. However, the reviewer believes that the conclusion that juvenile delinquency and petty adult crime are not determined by race or nationality group but by the social and economic class is unwarranted. A more justifiable conclusion would be that a number of factors such as race and nationality, illiteracy, subnormal characteristics, physical and mental qualities, and the concentration of the foreign-born in the crowded districts of the city are all contributing factors. It is difficult to select a single determining factor.

FLOYD W. REEVES

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